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PERSPECTIVES ON NOMADISM

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PERSPECTIVES ON NOMADISM

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AND

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Preface

WILLIAM IRONS

THESE ESSAYS are the result of the "Symposium on Nomadic Societies" held at the 1969 Meeting of the American Anthropological Association. The symposium was chaired by Philip Salzman, Brian Spooner, and myself, with Neville Dyson-Hudson serving as discussant. The purpose of the symposium was to bring together a number of anthropologists who are currently engaged in writing up the results of field research among nomads so that they might benefit from mutual discussion of common issues arising in the study of nomadic societies. Most of the participants had only recently completed the field research on which their papers were based, and in fact one participant, Daniel Bates, interrupted his field research in order to return to the United States for the symposium. After the symposium the participants reached the conclusion that the papers presented indicated that anthropologists currently studying nomads are asking very different questions and focusing on very different issues than those that have traditionally been thought crucial to an understanding of nomadic groups. It was further concluded that publication of the symposium papers in a single volume would be the most effective way of communicating this theoretical reorientation to other scholars interested in nomadic societies. The papers in this volume by Rada Dyson-Hudson, Nina Swidler, and Warren Swidler are basically the papers presented in the original symposium; the paper by Paine is an entirely new paper, and those by the remaining authors have undergone extensive revision. As the organizer of the symposium I would like to thank all of the participants for their contribution to its success. To Gus Thaiss of York University, Toronto, who has devoted the necessary time to the preparation of this volume, my appreciation is also gratefully expressed.

The Study of Nomads

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I

NOMADS HAVE BEEN the subject of attention from western writers for a very long time indeed, and it is possible to compile a long bibliography of items in several languages about them. But the simple if somewhat gloomy truth is that we really know extraordinarily little about human behavior in nomadic societies. Certainly much of what passes for knowledge about nomads (inside or outside the anthropological profession) is quite misleading. Apart from commenting on the place of this particular set of essays in the general anthropology of nomads, I would therefore like to use this introduction to explain (as far as I can) why nomadic studies are so backward, and to suggest the direction in which a more coherent and satisfactory study of nomads might be developed.

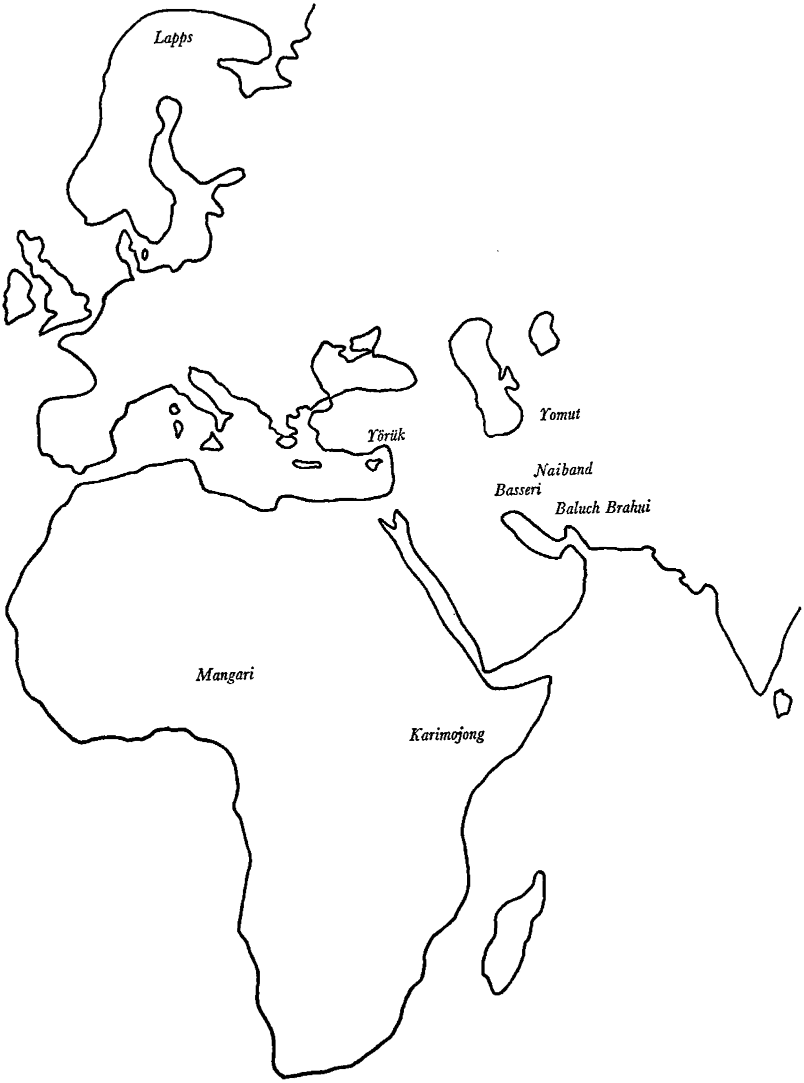
Nomadic studies seem always to have had a curiously inchoate, non-cumulative character. To go back only a century, the work of Robertson-Smith in the 1880s should have provided the same kind of impetus for the anthropological study of nomadic groups as did the armchair reflections of his contemporaries for the study of Australian aborigines. His style of thinking was as applicable to living communities as any anthropological thinking then available. For example, the major characteristics of what we now call segmentary lineage systems are clearly brought out in the first few pages of *Kinship and Marriage in Early Arabia* (1885): that is, the formation of groups on a reduplicative principle, and the essential instability of such groups. In the same place, he touches upon contracts, which we still recognise as a significant feature of the nomadic political situation. In *Religion of the Semites* (1889) he had postulated a distinctive "pastoral religion" in which groups "transferred to their herds the notions of sanctity and kinship which formerly belonged to species of wild animals," with the consequence that "the way was opened for the formation of religious and political communities larger than the old totem kind" (1894 ed., 355). Since he also perceived the consequences of religious beliefs for group solidarity, and suggested that the study of ritual had primacy over the study of beliefs in understanding religion, one would say that here as much as in Australia was offered the incentive to study religious origins by observing native practice.

Nor, when compared with the Australian case, did the nomadic world particularly lack first-hand observers whose information might similarly have tested and stimulated armchair scholarship. A good hundred years before

Robertson-Smith's work, Volney had presented western Europe with a remarkably lucid discussion of Near Eastern pastoral peoples, their relation to each other and to sedentary groups, and the mixed ecological and political facts (as we would now phrase it) accounting for their manner of existence. (Volney, 1787. See especially pp. 195–214 of Gaulmier's 1959 edition of this work.) Steadily closer to Robertson-Smith's time, Burckhardt's *Notes on the Bedouins and Wahabys* had appeared in 1831; Duveyrier's *Les Touaregs du Nord* came in 1864; Guarmani's account of the Northern Nejd was available in 1866, closely followed in 1867 by Palgrave's account of his travels in *Central and Eastern Arabia* (1867) de Crozals had provided explicitly ethnological work on a pastoral people with *Les Peulhs* (1883) and in between Robertson-Smiths's two major works appeared Doughty's massive *Travels in Arabia Deserta* (1888). Unfortunately, the complex interaction of scholarly speculation and direct observation which elsewhere did so much for the early growth of anthropology simply never developed as far as pastoral nomads were concerned. Orientalist, geographical and anthropological impulses remained separate, and such knowledge as there was became scattered across three largely self-insulating fields of enquiry.

Thus despite its variegated interest in nomads, the nineteenth century had bequeathed only sloppy foundations for building a coherent anthropology of nomadic societies; and the early twentieth century showed little signs of doing so. Compare, for instance, Jaussen's *Coutoumes des Arabes au Pays de Moab* (1908) with its (now highly regarded) contemporary, Junod's *Life of a South Afcican Tribe* (1913). Both are missionary works, and to my mind one is as good a "tribal ethnography" as the other. But what has made Junod a classic is that much professional anthropological work has flowed from it; whereas the first professional anthropological work on Arab nomads after Jaussen (Seligman, 1918) was for many years also the only one. Again, the early comparative study of nomads by Bernard and Lacroix (1906) was a remarkable effort for its time. But it was geographical rather than sociological in spirit, and one might well consider it an early obstacle rather than an early contribution to an anthropology of nomads in that it has bent subsequent French studies of northern Africa into a typologising-generalising mode. To take a final example, neither Lönneberg's early insights into human-herd relationships among Lapp reindeer nomads (1909) nor Hatt's subsequent more general work in English (1919) seem to have been taken up by those concerned with pastoral nomadism in other areas of the world.

Decade by decade into the twentieth century, the lag in nomadic studies became more pronounced. By the end of the 1920s, Malinowski had charted a new direction for anthropology; but all nomadic studies had to show was continued separate efforts by men whose main skills and principal duties were other than anthropological. Thus, Kennett (1925) is, for its time, a commendable study of customary law, but is nonetheless the incidental observations of an administrator – and still almost alone in its field. Again, Musil (1928) is essentially the result of allowing explicatory footnotes on poetry to run into each other; and a clear reminder that linguistic expertise may be necessary but



Locations of Pastoral Groups

is not sufficient for satisfactory anthropology. Forde's "reader's digest" version of the Rwala in his widely circulated text (1934 and later) has given them a classic status in the ethnographic inventory, it is true. But that anthropologists can still seriously quote it shows more the lamentable state of nomadic studies than the value of Musil's book. In Rennell Rodd's Tuareg study of the following year (1929) there is more that is anthropological in spirit, but it is still anthropology of the Seligman rather than of the Malinowski kind.

In most respects the thirties brought nothing newer than the twenties. They could fairly enough be typified by Murray (1935) – the able but incidental observations of a Director of Desert Surveys; by the first of von Oppenheim's relentlessly genealogical volumes (1939); and by Mackintosh's early study of Bahima pastoralism (1938). Since relative deprivation was now measurable in terms of theoretical shortfall from Radcliffe-Brown's *Social Organisation of Australian Tribes* (1930) as well as ethnographic shortfall from Malinowski's *Argonauts of the Western Pacific* (1922), the study of nomadic societies was lagging far behind the leading edge of anthropology.

One can't help feeling that more *should* have come of the thirties instead of a minor repeat of that first leap into oblivion which nomadic studies had made earlier, at the time of Robertson-Smith. For changes were in the wind. Daryll Forde's *Habitat, Economy and Society* (1934) had presented a lengthy and systematic treatment of pastoral groups, among other things. A careful re-reading of it now reveals his clear-sighted grasp of many issues in nomadism that have continued to be oversimplified by later writers. But to all appearances the volume was a geographically oriented textbook for undergraduates, utilising earlier materials; and this – coupled with the fact that Forde's own anthropological research led him to West African agricultural settlements – may account for its lack of immediate impact on the anthropological study of nomads. Again (according to Montagne (1947: preface)) Boucheman and his colleagues at the Institut Français du Damas had begun to turn their attention to problems of social structure and pastoral economy among nomadic groups (see Boucheman, 1934). These were the same problems that Evans-Pritchard was addressing by the end of the decade (1940). But the war was on by the time *The Nuer* appeared, and in that war Boucheman himself was an early casualty. Moreover, Evans-Pritchard's achievement was perceived in the context of African anthropology (cattle cultures) and the field of social structure (lineage systems) rather than as the first modern study of problems central to nomadism. Even without the major disruption of a world war it is not clear that the relevance of *The Nuer* would have impressed itself on those who think of Arabs whenever nomadism is mentioned, despite that fact that most nomads are not Arab, and most Arabs are not nomadic. In 1940, also, Lattimore's *Inner Asian Frontiers of China* had appeared, with the clear suggestion that nomadism could be a controlled political response and not merely an environmentally induced reflex (see esp. pp. 331–334). But the implications of that powerful suggestion were not systematically taken up either.

In any case, the war came and went; and in what was left of the forties, as people got down to intellectual matters once more, it was as if the immediately pre-war stirrings had never taken place. Lhote (1944) has some interesting material on Tuareg politics, but embedded within a classically ethnological treatment. Feilberg's study of the same year is concerned with tents rather than the activities they enclose. Montagne (1947) tried hard enough to focus on matters of Bedouin economy and society, but was utilising old work to do so, and in any case only intended an introduction for the general public. Evans-

Pritchard's own *Sanussi of Cyrenaica* (1949) of this period looks backward much more than it looks forward. Like so many earlier studies of desert peoples, it was based on information gleaned while upon other duties; it was shored up with facts of much earlier vintage (de Agostoni, 1922), and its comments on social structure provided less a new look than a Nuer look at Bedouin society. As the least anthropological work of a great anthropologist, it was accordingly less out of place than might have been expected with two other accounts of nomads appearing in that same year: Hermanns' *Die Nomaden von Tibet*, and Dickson's *Arab of the Desert*, the one in the Vienna, the other in the Sears Roebuck, tradition.

So we come to the 1950s, and while others will no doubt have their own preference for just where the watershed lies between old and new in nomad studies, for me it is the period from early fifties to mid-sixties, and the field research which was accomplished at that time. In the early fifties Peters had recently completed a field study of Bedouin in Cyrenaica, and Gulliver of Turkana in Kenya; international research was in progress among reindeer Lapps of northern Europe (Pehrson and Whittaker) and among pastoral Fulani of West Africa (Dupire, Hopen, Stenning); and Cunnison had started his work with Baggara Arabs in Sudan. In the mid-fifties came Lewis's work with pastoral Somali, Pehrson's second study – among Marri Baluch, the beginning of Jacob's long period with East African Masai, and the joint ecological-anthropological work my wife and I were trying with Karimojong in East Africa. Later in the fifties came Spencer's work with Samburu (Kenya), Stenning's second piece of pastoral research – among Bahima (Uganda) and Barth's study of Basseri in Persia. As a result, between Whitaker's *Social Relations in a Nomadic Lappish Community* (1955) and Cunnison's *Baggara Arabs* (1966) there appeared a corpus of material capable of transforming the study of nomadic societies.

It is certainly not a point of time alone which marks this as a watershed. There could scarcely be a greater contrast than that between Stenning's essay on the developmental cycle of Fulani domestic groups, and the multi-authored entry for "Badw" in the revised *Encyclopedia of Islam* (Coon *et al.*, 1958) both of which appeared in the same year. An older style of anthropological investigation was strongly represented in the early 1950s by a series of essays on nomadism in the Southwest Journal of Anthropology (Bacon, 1954; Itkonen, 1951; Krader, 1955a, 1955b; Patai, 1951). Moreover, in that same period field research among nomads was being conducted which had quite different emphases – ethnological or museological (such as Feilberg 1952, Ferdinand 1956–9, Kronenberg 1958, Dostal 1967, and the many articles by Nicolaisen culminating in his monograph of 1963); or geographical (Capot-Rey, 1953 for instance); or both (C.H.E.A.M. 1953, Patterson 1956, Chapelle 1957, de Planhol 1959 are examples).

The essential difference was that for the first time a set of observers who were *social* anthropologists were working *directly* with nomads; and that consequently – some thirty years after it had happened to other areas of anthropological investigation – the Malinowskian impulse had finally entered nomadic studies. Unavoidable inheritors of the Malinowskian revolution, they were – consciously or not – following his early programmatic exhortations ("Marriage", *Encyclopaedia Brittanica* 14th edn.) to record ordinary, day-to-day activities just as much as the exotic, and to search for explanations by way of the evident facts of observable behavior before invoking the weight of the past to account for the actions of the present. The better that advice has been followed for any nomadic society, the more we can now claim to understand it; and where it has not been followed we still cannot, in reality, claim to understand it at all.

Despite the great potential of the work of the fifties, however, no general transformation of nomadic studies has yet occurred. There are enough examples in the recent presentation of nomadic phenomena – whether to non-anthropologists, to anthropological students, or to anthropological researchers – to make this quite clear. Thus, there is very little of social anthropology – as distinct from geography or culture typology – in the several UNESCO-sponsored treatments of nomadism which have appeared in recent years (UNESCO 1959, 1961, 1962, 1963). The nomad emerges as a creature of, rather than actor in, his environment in Johnson's otherwise valuable critical survey and translation of available nomadic materials (1969). A recent introduction for students (Sahlins, 1968) treats pastoral nomadism as the negation of agriculture; as having classic and attenuated forms; as involving fully specialised herders, entirely devoted to the care of their numerous animals, in the course of which they move dramatic distances: and the tribal examples rapidly shuffled into and out of the text in support of these views are given in a murkily homogenising "ethnographic present".

At the level of anthropological research for anthropological researchers, the vocabulary may become more sophisticated: but it can still cover older procedures or outstrip its data in doing so. Thus, Sweet (1965) has recently attempted the socio-ecological analysis of camel pastoralism from brief interviews and old reports, despite the (honestly admitted) facts that "None of the sources on the Bedouin provide the intensive description and analytic detail needed today" and that this represents "an awkward and uncertain procedure at best" (ibid. 147). Similarly, Leeds (1965) has tried a sophisticated systems analysis of reindeer herding, while simultaneously strapping himself to what Bogoras happened to record about turn-of-the-century Chukchi. Most recently, Rubel (1969) has in all seriousness undertaken to engage in the transformational analysis of herding societies by grounding Barth's complex procedures (1966) on a cornerstone of Musil's old and patchy Rwala data.

II

The simultaneous existence of these several approaches to nomadic phenomena are capable of causing considerable confusion, because different forms of enquiry imply different requirements as to data, different constructs for analysis, and different styles and standards of conclusion. Some clarification of them is surely a pre-requisite for further progress: let me try.

There are, it seems to me, two radically different styles of thought discernible in work on nomads. One style of thought has arisen out of a need to handle fragmentary data (often, but not always, recorded by someone else). It works by categorising and homogenising procedures, and involves essentialist notions. The units of its analysis are, in effect, not societies but "ideal types", and its method of ordering phenomena is to produce typologies and classifications. Accordingly we have the concept of a "pure" nomadism, in which extremes of stock dependence, possession and movement, and opposition to agriculture and wider market involvement with settled populations, are all emphasised. Groups having less in the way of stock possession and dependence, of movement, of separation from agriculture, or of independence of settled populations and external markets are then conceived of as being fractionally nomadic or "not really" nomadic. This is the style of thinking most common in geographical descriptions, and in anthropological accounts of culture areas or culture types. A characteristic form of its expression is the "railway map" in which entire "tribes" are seen as making distinctive, uniform, regular and total moves of an environmentally-responsive sort. The cultural equivalents of such maps are broad oppositional categories – apparently endemic in writings on the Middle East – of the kind "nomad and peasant", "tribal and civilised", "the desert and the sown". The equivalent of the geographer's assumed spatial homogeneities are, in such anthropological treatments, assumed temporal homogeneities in which data of widely different dates are fitted together for descriptive (rather than for historical) purposes. It is, in short, a simplistic style of thinking forged from the desire to generalize from incomplete data.

The other style of thought has arisen out of the need to handle direct observation in the field: I would characterise it as behavioral or realist because it arises from the necessity to record data which come as an unclassified, continuous stream of happenings, whose pattern can only be discerned by missing as little as possible. It is permanently concerned with specificities – of time, place, number, frequency, duration, identity, intent, option and so on. Its characteristic form is the analytic description of variables in a system, whereby general patterns are indicated through describing and inter-connecting particular instances.

Employing these different modes of explication obviously leads to different consequences. In particular, I would suggest that attempting to employ analytical procedures of the first type to deal with data of the second type is unrewarding because it leaves too much of the variance unaccounted for; and attempting to apply analytical procedures of the second type to data of the first type is delusory because the data are not adequate for the demands of the models.

More than anything, it is the essentialist cast of so much thought about nomads (including, as I shall suggest later, the concept of "nomadism" itself) which is responsible for the otherwise paradoxically slow development of studies in nomadic behavior. For if movement is treated as an absolute quality of particular human groups, rather than being relative and dependent on other factors, then our most profitable questions about spatial mobility are pre-empted. We settle too readily for categories which do not so much explain as explain away the realities of nomadic behavior.

If we are to build upon the gains of the fifties, we must pursue a behavioral and realist style of thought as systematically and as vigorously as possible. We should try (for working purposes) to cultivate assumptions of variability rather than invariance, of contingency rather than of regularity, of individuality rather than typicality. We should try for realism and detail, and persistently fight the tendency to generalise too quickly from the data we collect. This is no plea for a fragmenting social science based on infinitely individualised cases. We can always simplify, generalise and modulate from our detailed cases; but we cannot extract causes, details, and variations from data acquired as general statements, modalities or norms in the first place. (This is not a problem restricted to nomadic studies, of course: it would seem to be inherent in social anthropology. But more people know that it is "obvious" than do anything about it, so it is far from being solved.)

In short, by assuming variability above all, we are led to look for variables. Insofar as we must use units, then we are led to look for the smallest possible units, whether of space, time, resources, personnel, activity or whatever. That not only suggests – in a common sense way – that we shall thereby be provided with the maximal range of variability our investigation allows; but we also know from systems analysis that the most effective approach for understanding complex processes is to break them down into a (necessarily) large number of simple unit components, rather than trying to deal with a small number of (necessarily) quite complex units.

Furthermore, since contingency and variability are the essence of nomadic pastoralism (as manifestations of that adaptive flexibility which has allowed herding groups to survive in marginal environments) it also suggests that the kind of units we should be paying attention to are more likely to be pragmatic than formal – *networks* rather than corporate groups, in fact (cf. Barnes 1954b and 1968). This is not merely a matter of academic fashion. As Mitchell has recently suggested (1969) carefully establishing the social reality represented by network links will allow us to extract corporate groups from them (and importantly, corporate groups as they actually operate, not just as they are ideologically perceived): whereas to go beyond the cultural ideology of corporate groups to effective social practice is not as simple a logical progression. (Which is not to state that formal group affiliations and their ideologically asserted attributes can be neglected, of course. Leach, 1965, has reminded us that jural and statistical norms are non-interchangeable categories and that both are relevant anthropological concerns.)

Recognising all this would still allow us to commit the simplistic error of handling phenomena which are unitary for the actor as if they were thereby the most revealing unit of analysis for the observer (the so-called emic/etic confusion). Since we know in principle that this is not the case, we would therefore do well to match the existential flexibility of the pastoralist's activities with a greater mental flexibility in our attempted analysis of them. This is surely one of the general virtues of Barth's suggestions about boundaries, transactions and allocations as concepts. They are an implicit reminder that our analytical units need not be population aggregates of some sort: they can as well (and sometimes more revealingly) be segments of time or action, points of contact or separation.

III

Where does this collection stand in relation to nomadic studies, and in particular how far does it meet the criteria which I have suggested as distinguishing a new from an old approach to nomads? At the outset I should make two points on behalf of the contributors. First, their essays are preliminary statements rather than fully finished presentations; either because they embody field observations only recently completed; or because they involve exploratory attempts to present the contributor's own earlier work in some new way. The authors are to be commended for their willingness to put these preliminary attempts in print that we might collectively learn from each other. Consequently, when I comment on matters that might be pursued beyond the stage presented, I do so not to find fault with a particular essay, not in the belief that I have superior insights to its author, but only to highlight general concerns. Secondly, in my attempt to knit the essays together into an overall statement about nomadic studies, it is possible that any particular author may feel that I have missed the real point of his essay and so done him less than justice: and he may be quite right.

Within these limitations, I would say the essays indicate that we are moving in the right direction for an adequate understanding of nomadic behavior, but that we clearly have some considerable distance left to travel. The essays are predominantly (though not entirely) behavioral in tone; for although all contributors have observed nomads at first hand, not all have chosen to make their field studies the focus of their discussion. Generally (but again, not entirely) they show a disposition to grapple with the complex realities of populations rather than settling for a typological juggling of categories; and a desire to explicate the observed activities of small units rather than the inferred characteristics of large regions. Most are directed to clarifying some particular feature – or cluster of features – in some specific society. Most utilise some specifically enunciated explanatory model to do so. Nonetheless, there are deficiencies: sometimes in the modelling of the data, sometimes in the data presented in support of a given model. Most (though again, not all) seem conscious inheritors, and would-be exploiters, of the legacy of nomadic studies of the fifties. But insofar as any theoretical inspiration predominates it is that of Fredrik Barth, and for reasons I have given, this is not surprising. Many of the important phenomena of nomadism are considered: pastoral management, family-stock interdependencies, nomad-sedentary relationships, eco-social linkages, movement patterns, the political consequences of spatial mobility, the interconnection of value structure and ecological response, and so on. But not all. In particular, the reader will find no references to that "pastoral religion" whose existence Robertson-Smith proposed so long ago, even in the form (to use Dupire's distinction) of "cowmania" rather than "cowdolatry"; nor – at the other extreme – to the infra-structural level represented by the detailed assessment of livestock population characteristics (though several articles make glancing acknowledgement of its existence). Rather than pursue these inevitably cryptic generalisations further, let me put some flesh on their bones by considering the essays individually.

A prominent organisational feature of nomadic societies is the local exploitation group – a set of domestic and herding units periodically drawn together by a temporary mutual interest in the peaceful exploitation of local resources. Its composition and operation must be grasped to comprehend the functioning of any particular nomadic society: it offers (as I hope to show in a later publication) a useful means of comparing nomadic societies. This is the unit which Warren Swidler takes up in examining the Brahui of Baluchistan: and he chooses an essentially ecological approach (the *Khalk*, as an adaptive device) which emphasises process (camp formation and maintenance). Because of his ecological approach, Swidler is constantly alert for limiting factors in the situations he touches upon (whether these relate to sheep in the tribal economy, to human use of varied ecological zones, or to flock size) and to animal needs as factors involved in flock maintenance (such as grazing behavior as a function of flock size, or the diet tolerances of sheep).

It is encouraging to have this sense of animal needs and characteristics represented among the essays here (Paine also touches upon it, though less specifically). Obviously, one can hardly hope for an effective analysis of livestock-oriented groups without some sophisticated grasp of their central concern, *viz.*: how to achieve sufficient productivity from the manipulation of available livestock within available environment so that people may be kept alive from one year to the next. Yet it is a topic most inadequately dealt with by anthropologists. For instance, during the past fifteen years my wife and I have collected first-hand data on herd productivity for cattle (Karimojong, Turkana) and camels (Beja) but it is difficult to find other anthropologically-oriented data to compare it with. Hopen (1958 ch. 9) and Jacobs (1965; 153–6) offer some data; but it will be recalled that even Stenning's laudable attempt to deal with human and stock fertility as interlinked (1959 ch. 3) breaks down when he reaches the livestock data, because they are so exiguous. An extensive literature exists on cattle in the tropics, but it either does not relate directly to the range conditions most relevant to the anthropologist's interests; or where it is applicable, seems frequently to be ignored by him, or to be unknown to him. Such information as we have about camel characteristics, moreover, comes generally from non-anthropologists (Gauthier-Pilters 1961, 1965, 1969; Schmidt-Neilson 1964; Leese, 1927; Curasson 1947; Droandi 1949, for example). To the best of my knowledge, we still have no account of reindeer herd characteristics that would compare with the information available for the (much more elusive) caribou (Kelsall, 1968). Yet clearly, until we have such data, much of our supposedly "ecological" and "management" discussions of pastoral groups must remain quite ingenuous.

For this reason I think Swidler might well take this sort of data further in explaining why Brahui seem to set 500 as the reasonable upper limit for flock management by a single shepherd. He notes the difficulties of flock control during grazing, and the effects on ingestive behavior, but I imagine there might well be other features involved: the gestation pattern of ewes and consequently the lambing frequencies and therefore the realistic work budget of hired shepherds, for instance.

Like other contributors to this volume, Swidler makes use of comparison, if only briefly. But it does serve to emphasise a notable feature of Brahui pastoralism, which is the split in leadership of camp communities between a group leader (as a man with optimal affinal connections) and a livestock director (who is a professional shepherd under seasonal contract for wages).

Not surprisingly, when working with such brevity, there is a skeletal appearance to parts of Swidler's essay, and clearly it needs some inputs of data where at present his references are too much informant-statements of general patterns. (We need to know what the range in *khalk* size actually is as opposed to what Brahui think it regularly or necessarily is.) But that he is operating at the right level for effective analysis is also clear. To understand Brahui in terms of ecologic response, it is the successive mingling and dispersal of households into and away from particular camp communities that we most need to know about.

Although not all the papers can (or will) be considered at this length, I hope Swidler will forgive me if I take the discussion of his paper further in order to demonstrate a general intellectual point which is important for this introductory survey. That point is: if one selects for analysis a small enough unit, and if one approaches it with a concern for process and in terms of variables (all of which he has done) then further lines of investigation open up on all sides. By contrast, the category-handling of large units, with over-much concern for reported norms (for "custom") closes off enquiry and renders the situation opaque. In the latter case, the only alternatives are acceptance or rejection of the argument offered: in the former case, one may recombine the variables to see if one can reach alternative conclusions or additional insights. Without suggesting that Swidler should have given us more in his necessarily brief essay, and without implying that I am seeing matters he has not seen already, I would like to indicate how I visualise this in the context of his material.

The Brahui situation as Swidler describes it is an invitation to pursue analysis further in decision-making terms. That is, given the demographic factors which are at work and that camp community membership is a voluntaristic, contractual arrangement, on what does a man base his decision to join one particular *khalk* of the several which he could? We would also benefit from specific schedules for several camp communities, which would allow us to trace not only their movements, but more importantly their accretions and dispersals – of stock and humans – throughout the year.

If one pursues the collection and analysis of data at this structural level, several variables suggest themselves. One strategy might be to take a single professional shepherd and chart his contracts over a period of years. This would no doubt have to be done by recall (and surely could be done since professionals generally have good recall where the details of their profession are concerned) and there might consequently be some homogenizing effect. But since the existence of professional shepherds, and their limited numbers, are argued as a factor in camp size, then their activities are worth pursuing. Which have been good contracts, which bad? Which flocks better or worse to handle, and why? Which times and places easy or severe? What combinations of people preferable to others and why? And how do each of these bear on the others? Or for the same year or two, a selection of shepherds might be questioned, and their schedules and activities compared. Again, since the matter of female labor is an issue, treating this as the central variable and developing detailed statements of variations in the numbers and relationships of women in the camps, and of their labor patterns, and of their response to these as light or efficient or excessive, would seem worthwhile. The same is true for harvest work; for periodicity and amount of farm produce versus flock produce in Brahui diet; for frequency of camel sale, and utilization of proceeds, and so on and so on.

Paine's article will have a familiar ring to anyone who has worked with pastoral peoples because it deals with the essential infrastructure of nomadic situations – the mutual dependence of coincident populations, and the socio-ecological linkages that emerge from it. Stenning brought this vividly to our attention some years ago, both from the point of view of the interdependence of herd and domestic work force in the family's developmental cycle (1958) and from the point of view of the overall interrelation of human and stock fertility (1959, ch. 3) in the two populations at large. In approaching this inevitable problem once more, Paine draws (as do others in this volume) upon the suggestions of Fredrik Barth: in this case, the utility of examining the allocation of time and resources by personnel within a management unit (Barth, 1967). Asking what herders do at different points of the seasonal cycle in terms of Barth's notion of allocations allows Paine to show that typologising can lead to over-simplification. Intensive and extensive herding, he indicates, are less distinct types than seasonally alterable modalities; and examining them as the outcome of decision-making allows him to suggest different – and more specified – causes than have previously been offered for the trend to extensive herding of reindeer. (See Patterson, 1956: 28–34, for example, who attributes this change among Jokkmok Lapps to an increase in settled population, to improved communication, and above all to a heavy immigration of Karesuando Lapps into the area.)

Paine's contribution is also a reminder that the comparison of Arctic with tropical pastoralists is as possible as it is overdue. In each case we have stock privately owned, with families as corporate units of ownership, but with stock often herded for management purposes in multiply owned aggregates and upon collectively owned natural resources. It is equally clear that if understanding a pastoral society involves understanding its herding operations, then understanding the herding operation in turn involves understanding the species herded. In short, for pastoral societies "socially significant phenomena" comprise a far wider category than "social phenomena", and the present unsatisfactory state of nomadic studies must in part be attributed to the slowness with which social anthropologist have come to terms with the results of veterinary and pasture research.

That the comparison of pastoral societies across widely different climatic zones cannot be simple is attested to by Paine's herding-husbandry distinction. Certainly for the East African pastoral groups I know, the distinction would be without meaning (to them or to their observer) since it is precisely the job of a herd-owner to reconcile the needs of livestock and humans (see Dyson-Hudson, 1966: 43–59, e.g.). It seems to me likely that this distinction may well be restricted to those societies in which livestock is not the only form of capital; and that it operates in the process of capital conversion, from and to livestock forms. One is reminded of Barth's discussion of Basseri in this context (Barth, 1963) and it may well be applicable to other pastoral economies with some degree of market orientation, such as Fulani cattle operations in West Africa and Beja camel operations in Sudan. In subsistence-herding situations (see Dyson-Hudson, 1969) I would think it probably less useful. It may well be for the same sort of reason that I fail to grasp his distinction – in the context of Lapp, Nuer, Basseri comparison – between movement to reduce ecological differences between seasons and movement to maximise the relative advantages of different seasons for livestock. I would have thought that the second was the basic quality of herd manipulation generally; although one certainly would want to distinguish between herd manipulation and simple herd movement (which might sometimes be the consequence or accompaniment of attempts to manipulate something else, such as political relationships). Similarly, Paine's triangular formulation of the herding situation would have to alter its form (as he concedes in a footnote) to include water in many pastoral areas. This can have interesting results in those areas (Turkana of Kenya, Bisharin of Sudan) where water and herbage are distributed eccentric to each other and call for oscillation between them. In some places, salt-licks would provide a further element in the equation. For this reason, there is much to be said for the simpler, and so more generalisable, model which deals not in polygons but in the minimal relationship of two interdependent populations against a background of (necessarily variable) resources and constraints (disease vectors, political pressures, etc.).

In general, then, Paine's approach to his data is clearly a modern one, with modern antecedents; but if I might offer a criticism, I would say it also exhibits some interestingly modern limitations. A model is offered which has the merit of being applicable to very specific situations and being eminently testable. But models are for processing data – that is their only purpose – and the data offered are exiguous. Real instances, rather than hypothetical ones, of herd manipulation would surely be preferable. Some idea, however crude, of the relative size of herds and households would have been a help. The overall figures he gives suggest an average household herd of about 250 head: but elsewhere he characterises under 400 head as "small" and over 1000 head as "large". The herding units – one infers – range from 800 to 1200 head at different times. But the very notion of resources is relative (to persons enjoying them) and the understanding of herd operations must always involve ratios of persons to stock, in relevant categories of age/sex and so on. I find it an ironic reminder of the curiously non-cumulative character of nomadic studies to compare Ernst Manker's amazing compilation (1953) of the human and animal composition and detailed movements of over a hundred *siidas* from 35 Swedish Lapp districts in 1945, which lacks only an explanatory model, with Paine's potentially explanatory model for composition and movement, which really only lacks data to try it on.

Rada Dyson-Hudson's essay considers the misleading qualities of category labels such as nomadic vs. sedentary and pastoral vs. agricultural – whether as used by the observer or, as self-images, by the members of a society. She shows in detail how complex the observable activities of particular Karimojong are, and pleads for a mode of analysis which will make the range of variation, rather than the modal type (whether observed statistic or cultural imperative) its major concern. This flows naturally from her concern with *populations* rather than *typology* as the appropriate frame of reference for understanding human behavior. In mapping variant instances of Karimojong behavior she is also able to show that pastoral movement is far from a simple response to environment in the Karimojong case; and is more, even, than a combination of natural and political response (given competing populations of "enemies" as a part of the environment). It must also, of course, take into account the characteristics of herd and family being manipulated – a matter which one can perhaps put under the general heading of "management", as is done elsewhere in this volume by Paine. But finally – and a matter not usually given enough consideration – the proper analysis of herding movement must allow for the fact that it is *individuals* we observe. Such individuals have distinctive psychological features of a cognitive, perceptual and emotional sort, apart from the different interests and different social ties which maximising or jural interpretations allow for. It is surely the case that if the social structure of a human group exhibits evidence of adaptation to environment, then the emotional structure of its members is also likely to exhibit (variably and with different degrees of selective advantage, since it is a population) commensurate responses.

This is a matter on which work has scarcely yet begun (though W. Goldschmidt at UCLA has work in progress to establish the psychological correlates of pastoralism) and Rada Dyson-Hudson clearly would not claim any sophisticated psychological analysis. But it is a reminder that an economic-maximising model for nomadic behavior will give us its own form of over-simplification if such psychological features are not taken into account. Like so many other things, it has long been under our noses: there is a range of successful to unsuccessful herders in any nomadic society, underlying the range of wealthy to poor stock owners; and members of that society can identify and (at least in part) account for such differences, which in part are of a psychological sort. If we wish to approach a full understanding of human behavior in nomadic societies, we must soon either extend our maximising model to encompass emotional states as well as material interests; or replace it by a balance model of the Heiderian sort which perhaps can (by means of signed graph models already available) encompass affect as well as material gain.

Although I am too close to this material (and its author) to see it as objectively as I might, there is a sense in which the two halves of it don't quite hang together. Perhaps I should say, more fairly, that although both sets of data fit for her present purpose, they are also applicable to other situations and exploitable in different ways. She is, for instance, one of the few contributors to this volume who does not invoke or reflect the work of Fredrik Barth, yet his notion of time – and resource-allocation would seem applicable to her economic diary material. Again, a factor in the differential mobility of different herders is (as she indicates) the differential productivity of their herds and the differential demands of their households: but these data are given elsewhere. (R. and N. Dyson-Hudson, 1970). Whether this means that she is here trying to do more than she need, or merely that you can only address one problem at a time, is beyond my present ability to assess.

Salzman's paper also casts doubt on the efficacy of established labels. Both by their animal husbandry practices and their mode of habitation, the Baluchi-speaking groups he considers would be most awkward to accommodate in any simplistic typology of nomads as tent-dwelling herders. Not only do they move into houses for part of the year; not only do they cultivate; not only do they sell their labor outside the tribal area; but they invest a great deal of labor in preparing foodstuffs for their livestock. This last habit, in particular, cuts across what otherwise seems a usable distinction between herding (whether subsistence herding or ranching) and stock farming, *viz.*: the raising of crops for animal fodder. Furthermore, by direct observation of local exploitation groups (the camping group of from five to twenty tents) he also avoids the over-simplistic delineation of grazing orbits: one of the groups he deals with is found in a particular area for the first time in ten years.

But I think that Salzman's desire to clean up our conceptual categories deflects him from more interesting matters. Most if not all the nomadic populations we know of are – when realistically rather than romantically observed – examples of "multi-resource nomadism". (The only interesting counter-example I can think of is Jacob's 1965 presentation of pastoral Masai as, traditionally, entirely stock-oriented.) Krader some years ago (1959:505–507) noted what he termed the "supplementary economic activities of the nomads"; Lattimore had much earlier made the same point and himself referred to a contention of 1896 that "pure" pastorialism was a most unlikely phenomenon (1940: ch. 3, fn. 75). There seems to me, therefore, less to be gained by categorising of multi-resource nomadism than by simply approaching the groups we study as *populations*, doing whatever mixture of things they do with whatever relative frequencies that they do them. We then could – and certainly should – differentiate among them in terms of the extent (and in each case the degree) to which they utilise other than livestock, and the periodicities of this non-pastoral exploitation. Different exploitative patterns are obviously likely to have different social consequences and different pre-requisites.

Nonetheless, the Baluch situation described by Salzman is of great socio-ecological interest. In part this is because there is seasonally a total halt in animal productivity and dependence on stored surplus (itself unusual across the general run of pastoral societies – and arguing, one would have thought, a considerable process of pressure on a human group to keep it so confined). In part it is because of that assymetric ownership of natural resources which is presumably a major variable among pastoralists when considered on a world-wide scale, *viz.*: some of the resources necessary for animal survival are publicly owned (pasture), some are the property of groups (water) – and to complete the picture, one should add the private ownership of the stock themselves. This must obviously lead to very different patterns of activity than situations (such as in much of East Africa) where pasture and grass are alike public property; or where (as Bates shows for southern Turkey) both are privately owned. It also emphasises that Paine's triangle of pastoral forces, which omits water, is of more use in the Lappish than in the comparative situation.

It is a happy situation that several essays in this collection draw on the work of Fredrik Barth. For one thing it shows that the time-lag between theoretical advances elsewhere in social anthropology and their application to nomadic studies is finally being reduced. For another, it seems to me that the structural concepts long prevalent in social anthropology have not always been as productive as they might in explaining the essentially pragmatic conditions of nomadic life – an obstacle which Barth's concern with social processes, organisational realities, and individual operations helps us to sidestep. For example, it is some twenty years since Fortes (1953) asserted the analytical gain of dealing with bounded social units (in particular, corporate groups: in effect, lineages). But even where the cultural situation most allows the application of this model, there are evident limits to what it can tell us about the social reality, as distinct from the ideology, of the nomadic social situation. (See, for example, Peters 1960; Cunnison 1966). Here there is great utility to Barth's suggestion (1969) that instead of bounded groups one can make an analytical unit of the boundaries themselves, and ask what is their nature? how and how far are they maintained? with what effects? As Horowitz's essay shows, it becomes a very useful instrument for disentangling certain aspects of the nomadic situation, because it allows him to deal illuminatingly with an ethnically complex region in which diverse ecological response exists without rigid separations of space or time. Horowitz is able to demonstrate yet again that a mode of livelihood is also a way of life, that economic production and value orientation are necessarily interlinked phenomena within a society. If in all societies wealth is the purposive accumulation of surplus for culturally defined expenditures, then for sedentary groups in Niger-Bornu, the ecologically defined conditions for maximising wealth contradict the culturally defined styles of wealth expenditure. Consequently and despite the agreement of nomadic and sedentary groups alike that wealth is calculated in terms of cattle (with the pastoralists ranking necessarily as the wealthiest) a complex economic situation is maintained rather than a simple trend to pastoralism. In short, to be a farmer or a herdsman is a matter of culturally conditioned choices, not merely a matter of ecologically conditioned responses; ecological niche and ethnic category can thus be seen as transformations of each other. As far as is possible within such a brief compass, Horowitz also indicates why particular gradations of economic enterprise exist between these two life styles, and what their implications are for social relations between the different populations.

Now this problem which Horowitz takes up in terms of Manga and Fulani is clearly the old question of nomad-sedentary relationships. But by addressing himself to such questions as: by what mechanisms are such distinctions maintained? what intermediate states exist? (and for how long? to what purpose? etc.) Horowitz provides a much more satisfying approach than the old caricature of nomad-peasant polar types, each simply separate from, opposed to, and disdainful of the other. Two other essays also deal explicitly with this same topic: Bates because he must, since Yörük themselves own no pastures, so even to speak of pastoral practices is inevitably to consider nomad-peasant dealings; Spooner because he chooses to take a regional overview of the Middle East, where nomad and peasant rank as the archetypal terms of discussion.

Of the two papers, Bates is closer in spirit to Horowitz because he is explicating a particular empirical case of interrelated populations from his own detailed field data: and no doubt this is what leads him to reject the polar categories of "nomad" and "peasant", despite the similarity of the Yörük situation to much of Middle Eastern nomadism.

An interesting point of contrast with Horowitz's analysis is that, despite the ethnic complexity of the Yörük situation, Bates discards an ethnic model as having no explanatory value (for the process of pasture acquisition, anyway). The outcome of his decision is profitable, I think, because we may easily make the same mistake with ethnic categories that we have formerly done with corporate groups, *viz.* to assume, simply because of their presence that they are the operant reference for people's behavior. It is also possible that were Bates addressing a different problem than accounting for a single economic variable, the triumph of individual economic rationality over cultural ideology might appear less pronounced. There is no reason to be disturbed by differences between Turkish and West African situations of course: but it is also reasonable to suppose that Yörük – like other human groups – *do* consciously distinguish themselves from others in some fashion; and that such distinctions may contribute to their particular place in the multi-ethnic situation of S. E. Turkey. In fact, even where pasture acquisition itself is concerned this may be so. For example, it seems to me that Bates' essentially economic account of why Kayseri agriculturalists lease their summer pastures to Yörük invites also some ethnic comment (along the lines Horowitz used for Fulani/Manga) since – apart from other facts which might exist – "the pastures... are situated at considerable distances from the villages to which they belong." Could there be values other than the purely economic here which persuade the farmers that leasing these distant pastures to Yörük is the most acceptable solution?

A major interest of Bates' paper for comparative nomadic studies is that he is dealing in considerable part with a man-made ecosystem – not only because domesticated animals are involved but because they must be manipulated in zones and periodicities set by other human activities – "the agricultural cycles of the villages through which they pass" – and because social constraints (potential damage claims) have here the force and effect of natural constraints in other pastoral systems: perhaps even greater, because they work to the farmer's advantage and so mean long-term encroachments on the pastoral situation. Perhaps we have here a most useful feature for grading pastoral systems, from which other features ought surely to follow: that is, the degree to which the pastoral occupation concerned is manipulated within a framework of natural conditions and processes – within and in response to which the pastoral occupation is conducted – and to what degree are they created by other populations in the same environment?

The simplest necessary model of a pastoral system would be that of coincident populations (human/livestock) surviving by balanced response to a natural environment in which grazing, water and disease vectors are the prominent features: the next stage of complication is a similar natural environment with two or more such sets of coincident populations, which to some extent compete with (or at least respond to the presence of) each other. However, a much more complicated situation exists if in the same natural environment a single set (let alone several sets) of coincident human/livestock populations must respond to or compete with other populations exploiting the environment in quite different ways. Having said this I am now disturbed by its obviousness: I am even more disturbed by the fact that it seems not obvious enough, for where in that very strange repository that we call "the nomad literature" are the detailed accounts of how such groups interact, of who sees whom to negotiate passage or pasture for how many, and under what conditions etc., etc., etc.? For this reason alone, Bates' essay is a welcome addition to nomadic source materials: he indicates not only the social nature of the "environment" which causes most Yörük economic activity, but also the effects (in terms of residence and movement patterns and power distribution) within Yörük society which that economic pattern leads to. What one eagerly looks forward to now – in the case of both Bates and Horowitz – are the detailed examples (and if possible, quantitative aspects) of nomad-sedentary interactions which they touch on qualitatively here.

Despite the fact that all would appear to touch upon similar phenomena, Spooner's paper is very different from that of Horowitz or Bates. It represents an oriental studies/cultural geography framework for a problem, on which some social anthropological terms are quite loosely hung. As must by now be evident, I am personally out of sympathy with such an approach because I see it as the principal means by which we have too long deceived ourselves into thinking we know something of nomadism when we truly know very little. Consequently, while I am sometimes baffled about the exact nature of the point Spooner wishes to make, and sometimes in disagreement with him about the point I think he is making, overall I am afflicted with the feeling that there is insufficient common ground to confront, test or resolve our differences. It is, for instance, not at all clear to me what "cultural ecology" (sometimes "social ecology") really means for Spooner. Therefore when he asserts nomadism to be a trait of cultural ecology rather than a type of society, and clearly feels he has solved a problem, I am in fact no wiser; and when he claims that "ecology cannot tell us anything further about the social or political organisation," I do not see just what limits of explication he is allowing or denying. Again, when he speaks of "animal, product, and of movement" as "the three main variables in the cultural ecology of pastoral nomads," I have the uneasy feeling that *variable* means something rather different to him than to me (more like a typological building block, perhaps). Given this general kind of intellectual difficulty, my disagreement on specific points (that of all stock, camels can exist on the sparsest vegetation, for example, or that class plays an ecological role in Beja society) is swallowed up as belonging to a lesser order of magnitude. Yet again, "ideology" and "values" seem not to be the same category for Spooner, so I find myself lost about both the grounds and the outcome of his argument here. And I am disturbed by his apparent willingness to rest on the conundrum: "Nomads and peasants hate and despise each other, and yet we know that nomads become peasants, and peasants become nomads." Surely this prompts the questioning of "the general ideological polarization between nomad and peasant"? But Spooner seems more inclined to accept than to unravel it.

In the end, I think the basic reason for my discontent with Spooner's essay, even in its present form, is that it stand *social* anthropology (as I understand it) on its head – which is what orientalist and geographical works on nomads tend to do. Perhaps I can make the point explicit by contrasting his essay with that of Horowitz. Both are concerned with values (or ideologies) and their unsurprising connection with ecologies (which after all are survival responses *chosen* by populations within environments) yet their procedures are totally different. Horowitz's method is to start with the specific pastoral and farming populations whose behavior has aroused his interest, to utilise a clear analytical model for it, to acquire the data to test his model, and to suggest the nature of its extension. Spooner's method is from the beginning to generalise, by categories (nomads/peasants) with qualitative and insufficiently specific terms, and to illustrate by passing references and some exiguous, qualitative description of two putatively exemplary communities. If Horowitz's essay is explicitly in the mode of Barth's style of situational analysis, Spooner's is implicitly in the mode of Patai's general culture survey (Patai, 1962: ch. 3) without adding much to it except a change of language, which paradoxically moves us away from the insights which

Lattimore seemed to be on the brink of in 1940 (see p. 328 ff.). I personally believe that a social anthropology of nomads must be built on the behavioral, specifying approach evident in Horowitz's essay, rather than on the culturological, generalising approach (evident in Spooner's essay) which we have had with us to too long with too little scientific result. I have no argument with the aspirations of anthropology to be a generalising science; and I sympathise with Spooner's evident desire to come to grips with a large area. But if we are to break free of the unsatisfactory generalisations we have inherited in nomadic studies, we must return first to the acquisition of more adequate data which relate to specific situations.

Nina Swidler's decision to deal with her particular set of ethno-ecological complexities at the level of political society places her treatment somewhere between the demonstrated local ethnic specificities of Horowitz and the typological, universalistic categories preferred by Spooner. Like Horowitz, she anchors her analysis firmly in one place; but like Spooner, attempts a broad view by spanning a considerable stretch (of time). Despite some sweeping (and I find, not too helpful) references to regional history in passing, however, she is clearly less interested in the venerable tradition of nomad *Kulturgeschichte* (still represented among contemporary writers: see, e.g. Klengel, 1966 and Jettmar, 1966) than in the social structural history which Barnes (1954a) long ago showed to be a powerful means for understanding particular political institutions. It is a useful reminder that if there is anything at all to the argument that social institutions represent, at least in part, ecologically adaptive responses by populations, then a long time-perspective is analytically useful – and sometimes analytically necessary. It is also a reminder that retroactive deductions from a present organisational form to a past process of development can quickly become circular arguments in this context. Here it may be that Swidler's essay suffers from the attempt to cover so much in such a short space, because the documentation that would lend strength to her arguments is lacking, and the nature of the sources she is drawing upon in relation to long past events is not clear. I am therefore at a loss to grasp (for instance) the exact sanctions and circumstances which have produced the particular balanced power relationship between confederacy and tribal leaders. It is difficult to get close enough to see even the contemporary operation of power at the tribal level (as she points out): to see these operations as a long developmental process involving several tribes is obviously an even more difficult task. M. G. Smith has shown (1960, 1961) that it takes almost tediously painstaking documentation to demonstrate long-term political processes for a single group; even where the data have been collected (as in Smith's case) to extend the analysis to several such units can raise almost insoluble problems of presentation. It is only fair, then to consider Swidler's essay as a signpost of the direction she is heading in, rather than a finished statement. Even so, she makes some generally valid points, I believe: e.g. that (*pace* Spooner) the structural possibilities for tribal organisations based on pastoral nomadism are quite limited, for essentially ecological reasons. Certainly, her attempt to use resource management as an analytic device at the overall political level (as distinct from the level of production unit – see Paine's essay, e.g.) is a most intriguing one. Hers is the only essay in the volume to take a historical perspective: it is encouraging (and important) to see that the analytic preoccupations evident in the synchronic studies are, in principle, still applicable.

Irons' essay touches upon (or contains material for) several issues dealt with by other contributors: ethnic economics, pastoral management, local exploitation groups, for example. It also has several distinct values in and of itself.

Firstly, Irons in effect demonstrates how close scrutiny of a single situation should lead us to discard those simplistic polarities of Middle Eastern anthropology: peasant/settled, tribal/nomadic. In this respect he has company (if sometime laggard company) elsewhere in the volume; but he deserves our thanks for firmly refusing to let the Yomut distinctions *chomur/charwa* lead him into rigid typological separation of agriculture from pastoral, of settled from nomadic Yomut. Both occupations exist within the same tribe, even within its larger descent groups; the pastorally-oriented themselves cultivate as opportunity allows; those sedentarised by wealth remain near, employ men in, and so support the pastoral mode; and men of each occupational preference visit each other and alike remain Yomut. It is to be hoped that this material, and that now available for Turkey, will eventually discourage the confusing naivetes propounded by the culture typologists.

Secondly, his treatment of Yomut households as linked sets of humans and livestock is squarely in the tradition of Stenning's exposition of Fulani family cycles (Stenning, 1958) and it is a pleasure to have at last material of this quality available for Middle Eastern and not only for African groups. This particular task perhaps accounts for the fact that while, like other contributors, he draws on the work of Fredrik Barth, it is Barth as ethnographer of the Basseri rather than as theorist that most interests him here. If he were so inclined he obviously could cast his data about shepherd contracts and carpet weaving by women in Barth's model of allocations of time and resources within the productive unit (Barth, 1967).

Some of Irons' material also suggests a general line of comparative analysis. His observation that "over a period of years the herds of larger families tend to increase while those of smaller families tend to decline" indicates a rather different situation than one would find (for instance) among East African cattle herders. How much this, and its associated feature of very large animal holdings, is attributable to different livestock characteristics (e.g., Karimojong cattle have a lead time of some three and a half years to first calving, and since sheep would operate on less than half of that perhaps, flock expansion would be more rapid than herd expansion); how much to the presence or absence of herding contracts for cash; and how much to variant marriage practices (bridewealth, polygyny, marital age) would be interesting to explore. All of which suggests to me than establishing for different societies their modal and limiting ratios of herds (flocks) to households, and the typical dynamics of these ratios, would be a useful starting point for ordering otherwise bewilderingly different features of their social life.

Finally, it is the only truly comparative essay in the volume and shows that in nomadic studies, as elsewhere in social anthropology, comparison to be useful must be quite specific, quite detailed, and very controlled. Airy references and undisciplined ranging over great stretches (whether of space, time or culture) really will not advance our understanding. Properly employed, however, it becomes not a supplement to model-building but a form of model-building itself. The components of our models do not have to be (though sometimes usefully are) abstractions: they can be the observed realities of some other ethnographic situation which constitute (for heuristic purposes) a prototype against which one's own observations can be tested point for point. In this way Irons shows us not only what the economic characteristics of Yomut households are, but why they are as they are; and in so doing, he brings into greater relief some of the features of Basseri society. This is the only way, I think, that comparison can legitimately avoid the charge of merely re-shuffling pieces of information we already have, for aesthetic rather than illuminating purposes.

IV

In relation to an anthropological problem far removed from nomadism, Schneider has commented (1965: 78)

> "The model which is a total-system model, which yields a typology, and where there is no specific... purpose for which that typology is constructed is... a mistake... It is too late in the history of the social sciences to think we can go out among societies and, by keeping our eyes open, sort them into their natural classes... Instead of typologies we need a series of relevant elements... these need to be vigorously defined as analytic categories and then combined and recombined into various... constellations."

These comments seem to me to bear usefully on the study of nomadic societies also, because it is with mechanical models of the whole-society sort that culturological and geographical discussions of nomadism commonly operate. Worse, in fact, since sometimes the units are not even total systems (as would-be comprehensive descriptions of a given time-state of a particular society) but ideal types cobbled together from such disparate records as may be available. This leads not only to mere pigeon-holing, but to bad pigeon-holing at that.

If we follow Schneider's very sensible advice and look instead for "relevant elements", it immediately becomes clear that the very concept of *nomadism* is poor and obstructive to analysis. For "nomadism" immediately breaks down into two quite distinct sets of phenomena, *viz.*: livestock rearing and spatial mobility. Each of those sets of phenomena embraces conditions quite beyond "nomadism" in its generally-accepted sense. Indeed, "nomadism" is simply the area of overlap between the two. Yoking the two sets of phenomena together is what has facilitated the erroneous assumption that nomadic movement is caused simply by environmental factors. Separating them out allows us to see that such movement may have social and (as Lattimore tried to tell us thirty years ago) political causes as well. This is not a new observation: as far as I can see, Krader made the point explicitly some years ago (Krader, 1959: 499) but in retrospective (evolutionary) terms and – to my surprise – chose not to develop it.

Let me give a brief indication of how nomadic studies might follow Schneider's advice in the identification of relevant elements and their combination and recombination. It will not be a complete example, any more than my earlier remarks on the development of nomadic studies would claim to be a complete history. But if one is expressing dissatisfaction and suggesting changes, one has the obligation to furnish some examples.

I have suggested that on close inspection "nomadism" breaks down immediately into two different sets of phenomena – livestock rearing and spatial mobility. I shall confine myself to the former because it is the more neglected feature of the two, and space is limited. By contrast, movement is a topic commented on by many writers on nomadism, though not always in a sociologically profitable manner: Bonnet-Dupeyron 1951, Cauneille and Dubieff 1955, Gilg 1963, Johnson 1969, Manker 1953, and Stenning 1957 are typical of the range of treatment available. I would merely add that a spatial mobility model ought to encompass many features beyond pastoral nomadism: gypsies in India and Scotland, say; New York-New England commuters; that significant proportion of the U.S. population which moves about the country every year or two; and commercial travellers everywhere. A preliminary ordering of elements could be achieved here by asking whether movement is with or without households, within or between occupations, with or without capital resources, and so on. If nothing else, such a generalised approach would help to avoid the crippling but common assumption that a pastoral form of mobility is always occasioned by, and only directed towards, the need for pasture.

If, then, one isolates a *herding model* from the more amorphous state of "nomadism" which partially contains it, into what component elements can it be divided? Since the central concern in a herding model must be the phenomenon of coincident populations (of livestock and humans, which are mutually dependent) we must start by establishing the characteristics of each population. Demography has widely known methods for assessing the parameters of human populations (numbers, distribution, age/sex structure, life cycle, natality and fertility and mortality rates, etc., etc.) so let us take that part of things as reasonably obvious and concentrate on the livestock populations.

(1) Clearly we need to know the *variety* of animal(s) herded – not as a "fact" of value in itself but because it implies a whole range of variables, *viz.*: growth curve in weight/years (from which in turn its mass, rate of gain, etc. will follow); gestation period; fertility period; mean calving (lambing/etc.) interval; whether calving etc. is free or must be assisted; neo-natal mortality rates; sex ratio at birth; lactation period; milk yield; milk composition; food requirements, by type and amounts; the range, incidence and effects of diseases to which it is subject – and their space-time-intensity vectors in relation to the environment exploited; capacity for self-feeding or need for human assistance; water require-

ments – amount and frequency and (in environmental and ethological terms) whether free or assisted; live-weight/dressed weight ratio (i.e. animal/meat); breed characteristics aimed for (utilitarian and decorative, real and illusory).

(2) Having established some of the facts which follow from animal type, we also need to know about animal *numbers*. This has to be stated in relation to natural environment; seasonal change; carrying capacity; in relation to the human population (as individuals, as households, as a range of poor to wealthy headowners etc.); in relation to outside demands (markets); and in relation to internal needs and aspirations.

(3) It is equally necessary to know something of the *aggregates* in which animals are herded, e.g. what is the age/sex composition of the aggregate; what technological and management practices are revealed by this; what consequences does it have for productivity; how do aggregates vary; and what factors (of seasonality, status, interest, etc.) are connected with this variation; with what human unit(s) is/are animal aggregate(s) associated and why; what are the upper/lower limits, the optimal/modal levels of animal aggregates for human groups; by what sets of natural and social dynamics does the size, composition and ratio-to-humans of the animal aggregates change.

(4) Since any livestock operation is a herbage-conversion process, it is also necessary to specify the characteristics of the *grazing*, viz. the amount, distribution, and variety of graze/browse/fodder; its seasonal growth patterns and its nutrient composition; and the many extrinsic factors which affect it and its relation to the stock population (associated predators, parasites, or disease vectors; technological features such as burning or harvesting for fodder; partitition by contract or social affiliation or political competition; topographic, edaphic and climatic influences upon it; stocking rates; herd management practices, etc.).

(5) One needs to know the human population's *degree of dependence on livestock* and (by no means the same thing) its *degree of commitment to livestock*. The first requires specifications about diet, seasonal food resources, other technologies of exploitation and the like; the second requires statements about human values.

(6) *The convertibility of livestock* to other resources (labor, land, food, cash, prestige, women, children, to name some) also needs to be specified, along with the mechanism of conversion (market, tax, bridewealth, clientship, feast, sacrifices, donation, and so on) and the appropriate occasions, contexts and motives for conversion.

(7) It helps to put herding activities in necessary perspective, of course, if one also specifies the *alternative possibilities of exploitation* offered by the environment (hunting, fishing, agriculture, trading, mineral exploitation, warfare, e.g.) and the *utilisation of alternative resources* which the population exhibits.

(8) Lastly, (and to save weariness for the reader rather than as any claim to comprehensiveness), it is clear that if the central phenomenon of a herding model is coincident populations of humans and livestock – the *human/stock association* – then one needs data on individual holdings, family herds, local

grazing associations, the "national herd" as a total economic resource, and the like. And this – clearly – raises a whole series of questions or variables in which the rights of individuals and their relationships to each other, as well as of individuals to groups, groups to groups, and individual or group to society, are stated in respect of livestock, or in respect of the natural resources on which these livestock depend.

I would sympathize with any objection that all this is an inventory, and the breeding ground for models rather than "a model" in any disciplined sense. My point, however, is that we are dealing with variables; and that as soon as we break down the category of "nomadism" into even its immediate constituents of herding and movement, and of these choose one, we are faced with dozens of variables which admit of virtually infinite recombination. Until we possess precise knowledge on such matters, we cannot claim adequate knowledge of even a single nomadic society – let alone "nomadism" as some more general form of human experience.

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Pastoralism: Self Image and Behavioral Reality[1]

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DATA GATHERED while we were living for a 3-year period among the Karimojong indicate an important difference between the image the Karimojong have of their activities; and what those activities in fact turn out to be. This difference between self-image and behavioral reality was found both with respect to herd management, and to sexual division of labor.

The Karimojong occupy a semi-arid area in north-east Uganda, where they practice both pastoralism and agriculture. In doing so, they exploit three ecologically distinct zones: the eastern highlands, the central riverine area, and the western plains. In the central area, which has relatively abundant permanent water and land suitable for cultivation, the Karimojong build permanent settlements. The peripheral areas to the east and west differ ecologically and are unsuitable for permanent occupation; these are exploited by grazing livestock from temporary camps which are quickly built and readily abandoned.

Being only 1° to 3° north of the equator, there is no winter and summer. The Karimojong year is however divided into a rainy and a dry season. The period of higher rainfall runs from about April through mid-September, but the distribution and amount of rainfall varies greatly from year to year. The period from mid-September through March is much drier, often with hot, dessicating winds. Rain storms do occur during the "dry season" – but are more frequent in the highlands and the far west of Karamoja than in the central area.

The self-image Karimojong have of their herding activities might be summarized as follows:

A herd of cattle is owned by the head of a family, and its movements are under his control. Throughout the rainy season, that herd is kept in a corral which forms part of the permanent settlement occupied by his family. The family is supported by the produce of the herd, as well as by agricultural produce which comes from the women's work in the nearby fields.

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When the dry season begins, the cattle and their herdsmen move out from the central settled zone to the peripheral areas in a decisive, abrupt fashion for which the Karimojong have a specific verb, *aWosit* – to move away. In the peripheral areas the herds are moved frequently in relation to available grass and water and corralled in temporary thorn stockades watched over by herdsmen. Old men, women and young children are left behind in the permanent settlements, there to subsist on agricultural produce until, with the beginning of the next rainy season, the herd and its herdsmen move back once more to the permanent settlement in the central zone. In other words, the description of activity given to the observer is that of movement-with-a-permanent-base, commonly called "semi-nomadic".

We recorded specific information about the moves made by the herds from seven settlements in the southern part of Karimojong tribal land, all of which were located within a mile of each other and formed a single neighborhood. This study was done in two ways.

In August 1957, the herdsmen from each settlement were questioned about where their herds grazed and drank during each month of the previous two years (going back to July 1955). We also mapped on a 1:50,000 scale all the water sources in southern Karamoja (Dyson-Hudson, 1958), and recorded all the place names. On our return from the field, by combining all these data, we were able to map with reasonable accuracy the locations of the camps of the seven settlements over the twenty-six-month period July 1955 through August 1957.

In addition, the cattle from one settlement (that of Loput) were followed on the ground for thirteen months. The milk yields, sex and age composition, and other details of this herd were recorded each month.

Great differences in herding practices were found. Some herd owners and their families looked after their own livestock; others pooled their labor and cattle resources with friends and relatives, and herded jointly. Some men kept their cattle in a single herd; others divided their cattle into a herd which stayed in the settlement for most of the year, and a herd which remained in stock camps throughout the year. The differences in herding practices revealed by these two studies cast doubt on the value of the simple notion "semi-nomadic" as adequate description of Karimojong behavior.

At the one extreme was the herd of Apalokosem. He and his sons herded alone, and his livestock remained together as a single unit for the entire twenty six months. For fifteen consecutive months, July 1955 through September 1956, the herd remained in Apalokosem's settlement. This was a year with an unusual amount of rain during the dry season period, hence grazing was available. The cattle were corralled away from the permanent settlement from October 1956 through May 1957; and then returned to the settlement in June 1957. The camps from which this herd was grazed were never more than thirteen miles from the permanent settlement, and often much closer.

At the other extreme were the cattle of Pulukol. He herded in association with several young men; two, like him, were married; the others were unmarried. Their cattle were permanently divided into a camp herd and a settlement herd. The camp herd orbited in the peripheral grazing areas during the entire twenty-six-month period. The camps of this herd never came closer to Polukol's settlement than thirteen miles, and the most distant one was fifty seven miles away. The decisions about moves were made by the young men who lived with this herd, and there were periods when Pulukol, who preferred the comfort of the permanent settlement, did not know where his camp herd was located.

Pulukol's settlement herd stayed in the permanent settlement for about eighteen out of the twenty six months (July 1955 through January 1956; the latter part of May 1956 through December 1956; and May 1957 through August 1957). During the rest of the time it grazed from camps located between seven and thirty miles from the permanent settlement. (A map showing the detailed movements of the herds of these two men has been published (Dyson-Hudson, 1969: p. 87).

From our observations, we estimate that the grazing radius from any given camp was some 6.3 miles (unfortunately no quantitative data were collected on how far Karimojong herds move in a single day, but this is a conservative estimate of the maximum grazing radius). Using the information about the locations of each camp, an estimate could be made of the total area of tribal land exploited by the cattle of these two men.

Apalokosem's cattle grazed over some 333 square miles of land during the twenty-six-month period of study, exploiting about 8.3 percent of the 4000 square miles of Karimojong grazing land. In contrast the animals from Pulukol's settlement grazed over some 1507 square miles of land during the same period, i.e. they exploited some 37.5 percent of the 4000 square miles of Karimojong tribal land.

The movements of the cattle of these two men gives a picture of Karimojong pastoralism that is very different from that provided by the Karimojong themselves. It also gives an indication of the variety of patterns of movement; Pulukol's camp herd was nomadic even by the strict dictionary definition, while Apalokosem's herd was completely sedentary for a period of more than a year. The grazing movements of the cattle from the five other settlements – including those of Loput – fell somewhere between these two extremes.

Our detailed study of Loput's cattle revealed further complexities of Karimojong herding practices. Monthly recording of the location of specific cows showed that the division between "settlement herd" and "camp herd", when it did occur, was not a rigid one. Sometimes all of Loput's cattle were kept together; sometimes they were separated into two herds, but individual cattle were moved back and forth between the two herds. Some of Loput's cattle even spent most of their time in the herds of friends, apparently a form of insurance since disease or enemy raids can wipe out a man's herd.

Only by realizing the complexity of Karimojong cattle movements – that in fact each herd owner moves his herd individually, not as part of a group – could we begin to ascertain the multitude of factors, both environmental and social, that determine these moves. They can best be considered as: (A) environmental factors; (B) properties of a man's family and herd; and (C) characteristics of the individual herd owner.

A. Environmental Factors

Environmental factors influencing a man's decision as to when and where to move his livestock are as follows:

1. Rainfall

Rain in Karimojong tribal land falls during violent convective storms, usually covering only a limited area. The rainfall is, therefore, highly variable from year to year at the same location; and in the same year at different locations. There is a higher probability of rain in April through September than in October through March; and at any particular time of year, a higher probability of rainfall in the western plains and the eastern highlands than in the central area. However, when and where a particular storm occurs is completely unpredictable.

2. Vegetation

The natural grasses in the eastern highlands and western plains are much more abundant than those in the central area for three reasons: first, because of the higher rainfall in these areas; second, because no agriculture is practiced in these areas; and third, because these areas are not grazed as intensively by Karimojong livestock. In the western plains, the grasses during the latter part of the wet season are so dense that they are, in fact, avoided by Karimojong herdsmen, since they shelter large carnivores who are a serious threat to the safety of livestock and herdsmen.

In contrast to the abundance of grasses, the nutritional value of the vegetation in the central area is much higher than that in the peripheral grazing areas. During the rainy season, the nutritional value of grasses everywhere is sufficient to maintain the condition of cattle. But during the dry season, only in the central area is the nutritional value of the vegetation sufficient to maintain the condition of cattle. It is even lower in the western plains than in the eastern highlands (Bredon and Wilson, 1963).

3. Soils

Because of their chemical composition, the clay soils on the western plains become very sticky when wet, making the valleys difficult to traverse. This means it is unsafe for livestock to graze the western plains during the rainy season, because they could bog down and perish.

4. Water Sources

River development in Karamoja is such that only in the central area are there dependable clean sources of water at predictable locations throughout the dry season. On the other hand, the eastern highlands, because of higher rainfall, usually has water available from springs or large rock pools. Finally, water in the western plains is located in muddy ponds and swamps, only a very few of which last through a bad dry season.

5. Cattle Disease

The tick vector carrying east coast fever occurs only in the southern part of the eastern highlands, one of the finest grazing grounds in Karimojong tribal land (Dyson-Hudson V. R., 1960). The disease is much more common during the rainy season. Most cattle move to the more northerly, drier part of the eastern highlands during the rainy season, and exploit the southern lusher part only during the drier weather when the risk of east coast fever, though still present, is much lower.

6. Enemy Tribes

The Karimojong tribe is bordered on all sides by enemies with whom they fight – the Teso, Sebei and Bagisu in the south and west; the Turkana and Suk in the east; and the Jie in the north. There is a steady mortality among herdsmen. During a twenty-six-month period in the seven settlements we knew best, three of the twenty nine men in the 20–40 age group were killed while participating in raids, or were murdered by enemies while herding.

The Teso, Sebei and Bagisu live to the south and west. These tribes are primarily agricultural. They do have a few cattle and occasionally compete with the Karimojong for waterholes on the southern and western margins of the district. Though there is occasional killing of individual herdsmen, large scale intertribal raiding along the southern and western boundaries of Karimojong tribal land does not occur.

The Turkana, Jie and Suk are all pastoral tribes, and compete directly with the Karimojong for scarce resources. Between the Karimojong and the Turkana, who occupy the floor of the rift valley, there is a 1500 ft. rocky scarp which has occasional springs and wells, but is not an important grazing area. There is competition over water resources, but up to the late 1950's there were no major battles between the tribes.

The situation with the Suk and Jie is very different, because there is no physical boundary between these tribes and the Karimojong, and there is competition over both grazing and water. Fighting with the Suk, including large battles between armies of young men, as well as continuous small raids and counter-raids, have occurred frequently since the 1920's, when the Suk were given permission by the Karamoja administration to use Karimojong grazing grounds. Raiding became such a problem that in the 1940's the Government officially closed the area on each side of the Kanyangareng river (the major water source in the eastern highlands) and even in 1958, any Karimojong or Suk livestock found in the area were confiscated. This did not stop the Karimojong and the Suk from using one of the finest grazing areas in Karamoja District. But it did add to the already numerous hazards that a herd owner had to consider in choosing where to graze his livestock.

Friction between Karimojong and Jie also exists. It was not intense until the 1950's. Then the increase in human and livestock population, due to medical and veterinary improvements, and the decrease in total Karimojong tribal area owing to the incursion of other tribes (particularly the Suk) into areas formerly grazed by Karimojong herdsmen, led to a shortage of resources. This produced a strong Karimojong push to use the northern grazing grounds normally shared relatively amicably with the Jie. (An army of over 600 Karimojong warriors on their way to attack the Jie was intercepted by Government authorities in 1958, the first such battle formation in that area for many years.)

Thus each of the three topographic regions have serious advantages and disadvantages which must be taken into consideration in any decisions about herd movements. Figure 1 summarizes the hazards and attractions of each topographic zone, i.e., the variables to which each man must respond in his decision of where and when to move his cattle.

B. Properties of Herd and Family

Characteristics of a man's family, and of his herd, also influence his decision of which animals to move where and when. They are as follows.

1. Productivity and Reproductive State of a Man's Herd

The age and sex distribution of a man's herd, the genetic make-up of Karimojong cattle, and the food and water available in the environment, all determine the productivity of a particular herd. Because of the high proportion of male stock in most herds (estimated at forty percent), the high calf mortality, short lactation period, and long calving interval, only an estimated 25 percent of a man's herd actually gives milk at a particular time. Of those giving milk, about half yield only enough for their calves, while the remainder yield a surplus of between one and three pints a day of milk for human use (Dyson-Hudson, Rada and Neville, 1970).

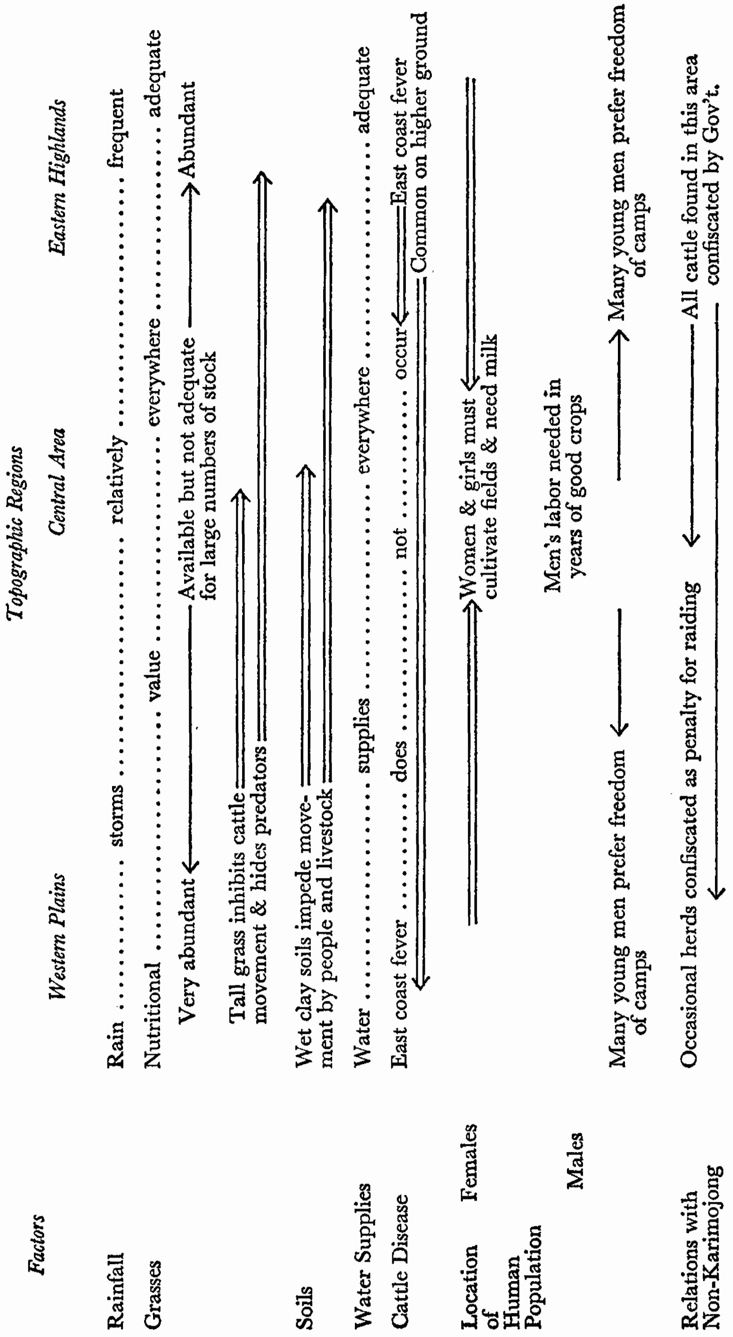
The herd owners usually aim to keep in the settlement area only those animals actually producing milk, while male stock, dry cows, and enough milch cows are kept in the peripheral area to support the men and boys who guard them. Thus, the productivity and reproductive state of a man's cattle is a factor determining how and when they will be moved.

2. Social Properties of a Man's Herd

Though cattle belong to the head of the family, some are allocated specifically to wives, and these rights transfer to the sons as they grow up (though the herd owner may use some of these allocated cattle to marry again while his

Fig. 1A

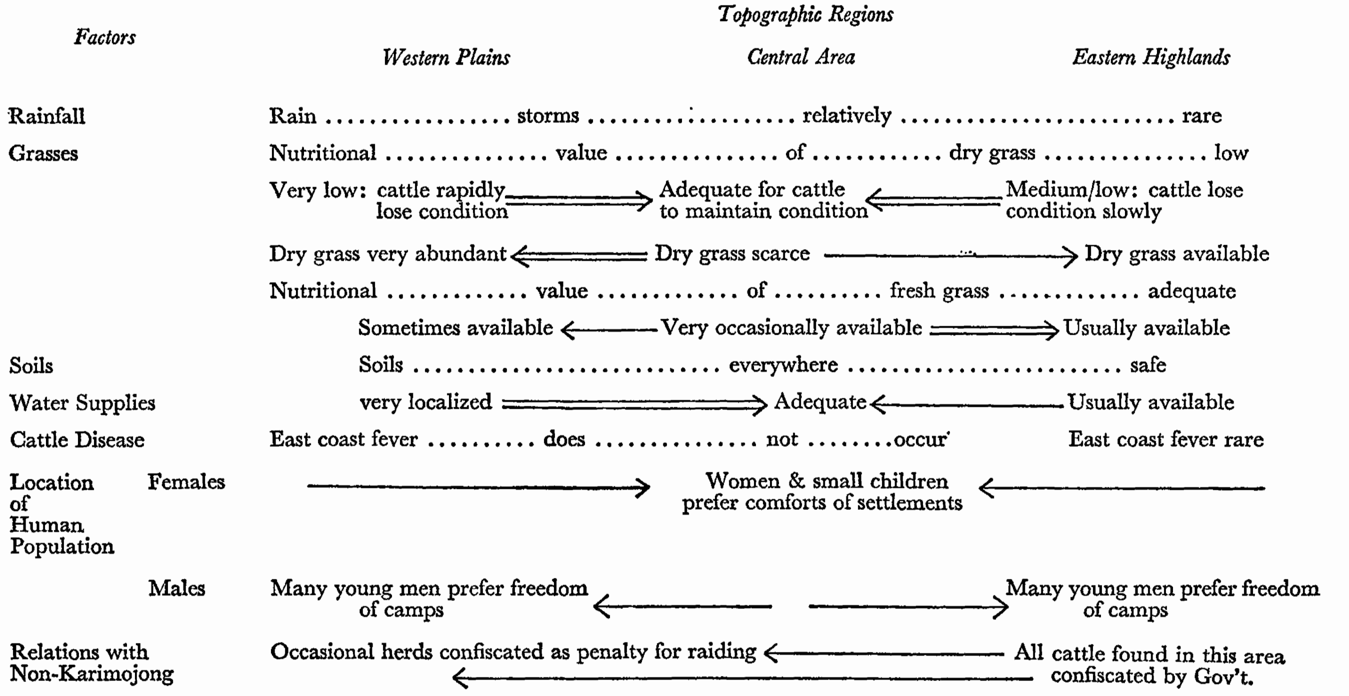
Factors Influencing Karimojong Cattle Movement (Rainy Season)


Topographic Regions
Factors
Western Plains
Central Area
Eastern Highlands
Rainfall
Rain .... storms .... relatively .... frequent
Grasses
Nutritional .... value .... everywhere .... adequate
Very abundant
Available but not adequate for large numbers of stock
Abundant
Tall grass inhibits cattle movement & hides predators
Soils
Wet clay soils impede movement by people and livestock
Water Supplies
Water .... supplies .... everywhere .... adequate
Cattle Disease
East coast fever .... does .... not .... occur
East coast fever
Common on higher ground
Location of Human Population
Females
Women & girls must cultivate fields & need milk
Males
Men's labor needed in years of good crops
Many young men prefer freedom of camps
Many young men prefer freedom of camps
Relations with Non-Karimojong
Occasional herds confiscated as penalty for raiding
All cattle found in this area confiscated by Gov't.

This diagram shows the numerous factors during the rainy season which interact to determine where a particular Karimojong herd owner moves his cattle at a particular time. It is based on data gathered in the southern part of Karimojong tribal territory.

Fig. 1B

Factors Influencing Karimojong Cattle Movements
(Dry Season)



Factors		*Western Plains*	*Central Area*	*Eastern Highlands*
			Topographic Regions	
Rainfall		Rain . . . . storms	. . . . relatively	. . . . rare
Grasses		Nutritional . . . . value	. . . . of . . . . dry grass	. . . . low
		Very low: cattle rapidly lose condition ⟹	Adequate for cattle to maintain condition	⟸ Medium/low: cattle lose condition slowly
		Dry grass very abundant ⟸	Dry grass scarce →	Dry grass available
		Nutritional . . . . value	. . . . of . . . . fresh grass	. . . . adequate
		Sometimes available ←	Very occasionally available ⟹	Usually available
Soils		Soils	everywhere	safe
Water Supplies		very localized ⟹	Adequate	← Usually available
Cattle Disease		East coast fever . . . . does	. . . . not . . . . occur	East coast fever rare
Location of Human Population	Females	→	Women & small children prefer comforts of settlements	←
	Males	Many young men prefer freedom of camps ←		→ Many young men prefer freedom of camps
Relations with Non-Karimojong		Occasional herds confiscated as penalty for raiding ← ←		← All cattle found in this area confiscated by Gov't.

This diagram shows the numerous factors during the dry season which interact to determine where a particular Karimojong herd owner moves his cattle at a particular time. It is based on data gathered in the southern part of Karimojong tribal territory.

sons are still young). Whenever possible, a man sends to the settlement those cattle specifically allocated to his wives. Also, all herd boys are given a pet ox which they like to keep near them. Thus, social attributes of individual animals in his herd are factors in determining where a herd owner sends a particular animal and when.

3. Age and Sex Distribution of a Herd Owner's Family

The women and girls must stay in the permanent settlements from March through October to work in the fields. Moreover, many older women, and women with young children, prefer to remain in the settlement throughout the year because they are safer and more comfortable there than in the camps. Thus while herd boys following the cattle always have access to milk and blood, the needs of the more sedentary segment of a man's family must also be considered.

The number and ages of sons also affects the way a man may move his livestock. Though men and boys will help women with agricultural work, only males herd livestock; and young boys can only herd near the settlement. Consequently, a man must have both men and boys available as herding assistants in order to exploit grazing areas far from his parmanent settlement, and also feed his dependents in the settlement.

Thus the sociological and biological properties of a man's herd; the herding labor available; and dependents in the settlement, are all factors which influence a man's decisions about livestock movements.

C. Properties of Individuals

As I have shown, each man is subject to a variety of external factors which are important in determining livestock movements. However, these factors must be evaluated by individual herd owners, so properties of the individual also enter into the final decision as to when and where he moves his livestock. These are very complex and difficult to classify neatly, but we found the following behavioral differences which seemed to stem from individual differences.

1. Familiarity with a Particular Region

Though the moves of each particular herd we studied differed during the two years for which we have information, certain herd owners usually had their camps in the eastern highlands; and others usually moved their cattle to the west. This seemed to be a matter of individual knowledge of the water supplies and grazing conditions in a particular area.

2. Personal and Physical Differences Between Individuals

Three of the herd owners whose cattle movements we studied in detail did not have enough sons to enable them to divide their cattle into two herds. However, each man resolved this problem in a different way which seemed to reflect personal preferences and individual physical differences.

Apalokosem was an elderly man (about 60) who could not easily travel to distant camps. He had an adult son, an eight-year-old son, and two grandsons, one eleven and one seven. This was barely sufficient labor to look after one herd of cattle and the large herd of goats of whom he was particularly fond. He, his sons, and his grandsons, chose to look after the livestock by themselves, by grazing them as near to the settlement as possible (see p. 31-32). The goats remained in the settlement throughout the year, guarded by Apalokosem himself.

Pulukol was some 45 years old; in reasonably good physical condition, but not a very courageous or intelligent man. He had two adult sons (one tubercular, one healthy); two young sons ten and twelve years old; and an infant grandson – i.e. a herding labor force very similar to that of Apalokosem. Pulukol chose to herd with Akol, his son's wife's brother-in-law, who had some cattle, though not as many as Pulukol. Akol was a very fit young man who preferred the rigors of the camp to the relative comforts of the settlement. Pulukol allowed Akol to make most of the decisions about herding movements, and his cattle grazed over a vast area of Karimojong tribal land, while he spent most of his time in or near the settlement (see p. 32).

Loput, also about 45, was a man of high intelligence, great courage, and strong physique. His friends characterized him as a man unusually devoted to his cattle. However, he only had three young sons, ages twelve, ten and six, and so was unable to care for his herd of some 100 cattle without outside help. He joined together with his brother-in-law Angela, also about 45, who had many children, but whose cattle had been stolen by the Suk. Angela shared with Loput the responsibility for looking after the herd while it was in the stock camp, though Loput made all the important decisions. In return, at least two of Angela's sons lived more-or-less permanently with Loput's cattle, providing herding labor, and receiving blood and milk as their food. One of Angela's daughters stayed in Loput's camp during the dry season, and had her daily allocation of milk. She churned the butter from this, and made it into ghee, which was taken at intervals to Angela's settlement. (The other members of Angela's family lived in his permanent settlement and got milk from other affines, or stayed with their families in other settlements for most of the time.)

The markedly different ways these three men handled what was basically the same problem – i.e. shortage of herding labor – would seem to demonstrate that intrinsic differences between people as well as extrinsic factors are important in determining how a man manages his cattle.

To summerize, a detailed study of grazing movements of herds from seven neighboring Karimojong settlements revealed a complexity which could not be accounted for by the simple description which the Karimojong gave of their herd management practices. A more detailed look at herding practices made it clear that numerous factors – both extrinsic and intrinsic – are involved.

The self-image which the Karimojong hold with respect to the division of herding and agricultural activities is also quite specific. There is a clear presumption of the sexual division of responsibility in which the men and boys herd the cattle; while the women and girls tend the gardens.

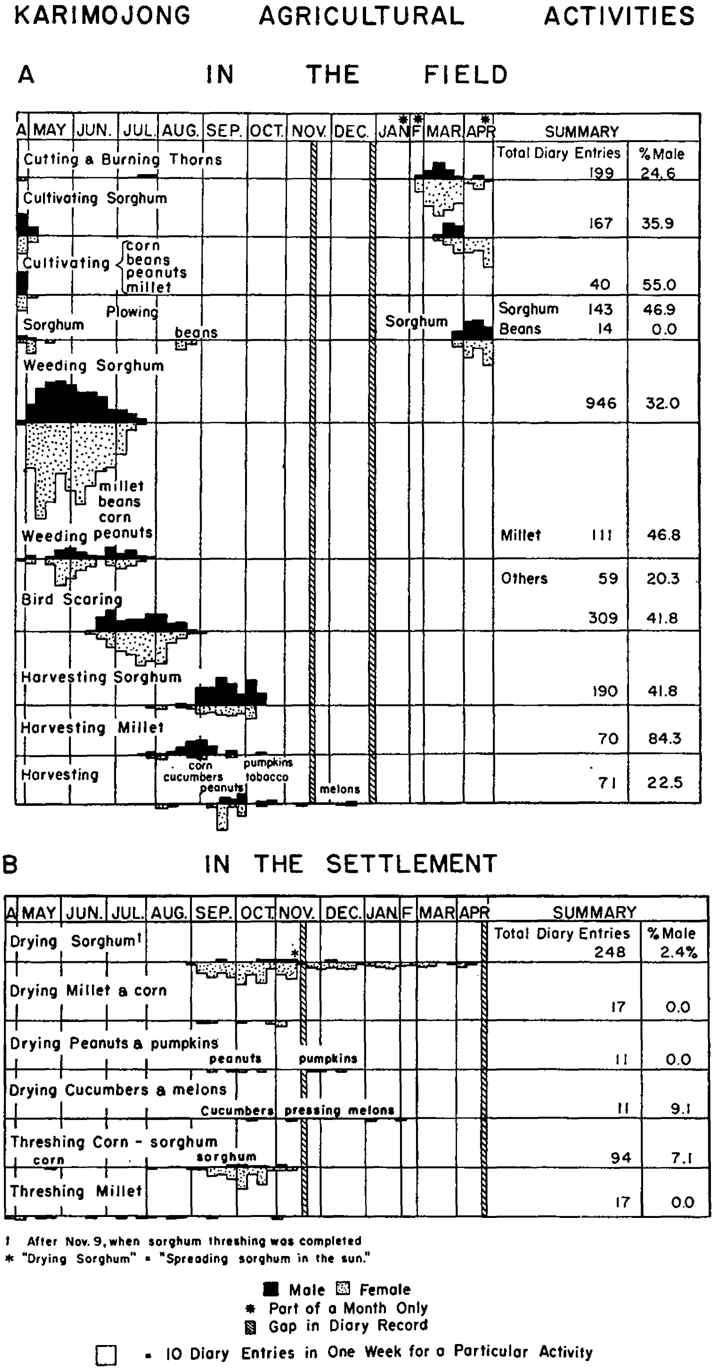


Figure 2A & 2B. These diagrams illustrate the sequence of agricultural activities during the year; and the proportion of males and females working on a particular task. They are a summary by weeks and by sex of the number of diary entries relating to a particular activity. The large number of males helping with agricultural work in the fields; but not in the settlements, is clearly shown.
Compiled by Rada Dyson-Hudson from a diary kept by a Karimojong schoolboy recording the activities of all the people in his settlement.

It was clear from our observations that the Karimojong self-image with respect to herding was a true reflection of their behavior. Women and girls milked the cows when the herds were staying in the corral of the permanent settlement. Otherwise the men and boys were entirely responsible for the livestock. Only once did we see a girl herding near our camp, and she was obviously embarrassed and unhappy about being required to do a boy's task.

The situation with respect to agriculture was less clear. Men helped to plow the fields; our principal male assistant was often busy during the spring hoeing the fields; and young men returned from the cattle camps to help with the harvest. But we attributed this to the exceptionally good year for crops; and did not really question that "Karimojong women do the agricultural work."

However, the analysis of a daily labor diary (kept by a Karimojong school boy living in his home settlement, and sponsored by the Karamoja Rehabilitation Unit at the suggestion of Dr. Audrey Richards) enabled us to compare the Karimojong self-image with the actual behavior pattern in a particular settlement. The settlement in which the diary was recorded was 60 miles north of the area in which we worked, and had a good, but not exceptionally good, rainfall during the period of the diary (April 1956 through April 1957).

Figure 2 shows the analysis of who did what jobs during the year the settlement was observed. Males only provided the herding labor (not shown in Fig. 2) while domestic activities related to agriculture (fig. 2B) were performed almost exclusively by females. So these do conform to the Karimojong self-image of sex role differentiation. However, males in fact provided almost half of the diary entries for agricultural labor in the field (shown in Fig. 2A). This reality clearly differs markedly from the Karimojong self-image.

I broke down these entries by ages (fig. 3) and by families (fig. 4) to try to get further insights into who performs the agricultural tasks in the fields. Some interesting patterns emerged with respect to the various activities.

The first tasks of the agricultural year were to clear the fields of trees and bushes and to repair the fences. This began in February, before the rains, and continued through March into April. Not surprisingly, this was performed primarily by older women, since most of the men were away with the livestock at this time of year; and the job is too difficult for younger girls.

More men helped with planting sorghum, a very important activity, which in 1957 began in the second week of March. Over half of the diary entries for planting millet involved men. This activity comes later in the year, after most of the sorghum had been planted, and millet was clearly a less important crop than sorghum.

Plowing sorghum began a week later, and more than half of the diary entries for this activity referred to men. "Husbands" and men ages 15–20 participated most in this activity.

When the planting was finished, the weeding began. More than one-third of the diary entries for this activity referred to men and "weeding millet" had the highest percentage of men. "Husbands" took an active part in weeding – more so than planting.

Figure 3 Analysis by Age and Sex of Karimojong Agricultural Labor
Total number of diary entries[1] *relating to a particular activity*
(Total number of individuals participating in a particular activity)

	Females							
	Daughters						*Wives*	*Total Females*
Age	*0–5**	*5–10*	*10–15*	*15–20*	*20–25*	*>25*	*>35*	
Cut'g & burn'g thorns			5(1)	9(3)	2(1)	26(2)	108(7)	150(14)
Cultivating sorghum		2(2)	14(1)	17(4)	1(1)	7(1)	66(8)	107(17)
Cultivating millet			1(1)	3(3)		2(1)	5(5)	11(10)
Misc. Cultivation				3(2)	1(1)		3(2)	7(5)
Plowing sorghum			5(1)	3(2)		3(2)	13(6)	24(11)
Plowing beans					3(1)		11(4)	14(5)
Unspecified plowing		1(1)	7(1)	5(4)	1(1)		22(7)	36(14)
Weeding sorghum		22(3)	30(1)	122(5)	20(1)	76(2)	373(9)	643(21)
Weeding millet				12(4)		17(1)	30(6)	59(11)
Weeding corn							2(1)	2(1)
Misc. weeding		1(1)	2(1)	11(3)	1(1)	8(2)	23(8)	46(16)
Bird scaring		64(3)	35(1)	43(4)	2(1)	8(1)	28(7)	180(17)
Harvesting sorghum			1(1)	12(3)	4(1)	9(2)	35(9)	61(16)
Harvesting millet				3(2)	1(1)	2(1)	5(4)	11(8)
Harv'g pump. & cucumb.		1(1)		1(1)		2(2)	4(4)	8(8)
Harvesting peanuts		5(1)	4(1)	3(2)	4(1)	4(1)	13(6)	33(12)
Misc. harvesting		1(1)	1(1)	5(2)	2(1)	3(1)	2(2)	14(8)
Drying sorghum		1(1)	8(1)	21(5)	1(1)	19(2)	192(10)	242(20)
Drying millet & corn				3(3)			14(6)	17(9)
Drying peanuts & pumpk.							11(6)	11(6)
Dry'g cucumb. & melons							10(3)	10(3)
Thresh'g corn & sorghum		3(2)	5(1)	22(4)	2(1)	10(2)	45(9)	87(19)
Threshing millet				3(3)	1(1)	5(2)	8(5)	17(11)
Total No. Individuals	0	4	1	5	1	2	9[2]	22

* Each age category is up to, but not including, the upper class limit.

[1] "April 29 Logono weeded millet" counts as one diary entry for weeding millet. If one person does several jobs in a single day, each is counted as a diary entry.

[2] Includes 1 entry for new wife, married during the diary year.

	Males								*Summary*	
	Sons						*Husbands*	*Total Males*	*Total Diary Entries*	*Percent Males*
Age	*0–5*	*5–10*	*10–15*	*15–20*	*20–25*	*>25*	*>35*			
Cut'g & burn'g thorns	names			ambiguous				49	199	24.6%
Cultivating sorghum	1(1)	8(2)	13(3)	19(4)	3(1)	1(1)	15(4)	60(16)	167	35.9%
Cultivating millet	1(1)			2(2)	1(1)		9(4)	13(8)	24	54.2%
Misc. Cultivation			1(1)	4(2)	2(1)		2(2)	9(6)	16	56.3%
Plowing sorghum			3(2)	18(3)		3(2)	19(3)	43(10)	67	64.2%
Plowing beans									14	0.0%
Unspecified plowing			4(1)	12(2)	3(1)	4(1)	17(4)	40(9)	76	52.6%
Weeding sorghum	7(2)	3(3)	19(3)	81(6)	4(1)	53(2)	136(4)	303(21)	946	32.0%
Weeding millet			1(1)	10(3)	2(1)	3(1)	36(3)	52(9)	111	46.8%
Weeding corn				1(1)				1(1)	3	33.3%
Misc. weeding				5(2)		1(1)	4(2)	10(5)	56	19.6%
Bird scaring	16(2)	8(2)	19(2)	59(4)		6(2)	21(2)	129(14)	309	41.8%
Harvesting sorghum			10(1)	76(6)	2(1)	11(3)	30(3)	129(14)	190	67.4%
Harvesting millet		2(1)	1(1)	5(3)	1(1)	3(1)	47(3)	59(10)	70	84.3%
Harv'g pump. & cucumb.			2(1)	1(1)				3(2)	11	27.3%
Harvesting peanuts			1(1)	5(2)	1(1)		4(1)	11(5)	44	25.0%
Misc. harvesting	1(1)						1(1)	2(2)	16	12.5%
Drying sorghum			3(1)	1(1)			2(2)	6(4)	248	2.4%
Drying millet & corn									17	0.0%
Drying peanuts & pumpk.									11	0.0%
Dry'g cucumb. & melons		1(1)						1(1)	11	9.1%
Thresh'g corn & sorghum		3(1)	2(1)	1(1)			1(1)	7(4)	94	7.1%
Threshing millet									17	0.0%
Total No. Individuals	4	4	4	6	4	3	4	29	51	

Figure 4

Analysis of Agricultural Field Work by Families

			Sum of Diary Entries: Sorghum[1] *(all field activities)*				*Sum of Diary Entries: Millet*[2] *(all field activities)*			
Wife	*Age*	*Name of Husband*	*Wife*	*Children (number)*	*Husband*	*Total (number)*	*Wife*	*Children (number)*	*Husband*	*Total*
A. Epur	>45	Noa	45	125 (7)	7[3]	177[3]	4	9 (7)	1	14[3]
B. Lopoye	35	Noa	33	106 (4)	7[3]	139[3]	2	7 (4)	1[3]	9[3]
C. Lotin	30	Noa	55	34 (3)	7[3]	89[3]	0	1 (3)	1[3]	1[3]
D. Lopuka	>45	Angolere (Dead)	57	62 (2)	Dead	119	1	2 (2)	Dead	3
E. Ayel	>45	Angolere	62	0 (1)	Dead	62	1	0 (1)	Dead	1
F. Alyat	>45	Kiyatak (Dead)	60	26 (4)	Dead	86	4	3 (4)	Dead	7
G. Meri	>45	Logono	47	138 (5)	60	245	23	39 (5)	48	110
H. Nagwee	40	Aburra	54	94 (4)	36	184	2	10 (4)	37	49
I. Nathinai	30	Lourien	61	62 (6)	79	202	3	2 (6)	6	11
Totals			474	647	182	1303	40	73	92	205

[1] Married men 14.0% of total entries.
[2] Married men 44.9% of total entries.
[3] The entries for Noa totalled under his first wife (Epur) only.

Scaring the birds from the fields was the most important activity during the time the grain heads were ripening, mid-June through early September, Males helped, but mainly only those under aged 20.

People of all ages and both sexes helped with the grain harvest (which began in late July and continued to the middle of October) but considerably more than half of the diary entries referred to men. There was an even higher percentage of diary entries for men harvesting millet than for harvesting sorghum,

The harvesting of cucurbits continued through the months of September, October, November, and December, and was primarily women's work, as was drying and threshing grains (Fig. 2B).

An analysis of agricultural work by families (fig. 4) reveals interesting differences between families and between crops. I have tried to relate these to different characteristics of the various families.

Unfortunately, we do not have a great deal of information about the settlement covered in the diary. However, we do know the age and sex distribution of the families. These data seem to indicate that the total number of diary

Figure 5

Number of Diary Entries for Field Work Related to Sorghum: and Family Labor Force

Women	*Number of Girls*	*Ages of Girls*	*Number of Boys*	*Ages of Boys*	*Number of Diary Entries Related to Growing Sorghum*
Meri	2	26 yrs. 15 yrs.	3	36 yrs. 19 yrs. 8 yrs.	245
Nathanai	2	14 yrs. 8 yrs.	4	6 yrs. 4 yrs. 3 yrs. 1 yr.	202
Nagwee	2	16 yrs. 5 yrs.	2	22 yrs. 18 yrs.	184
Epur	1	24 yrs.	6	36 yrs. 28 yrs. 22 yrs. 18 yrs. 16 yrs. 12 yrs.	177
Lopoye	1	18 yrs.	3	15 yrs. 10 yrs. 5 yrs.	139
Lopuka	2	28 yrs. 5 yrs.	0		119
Lotin	1	5 yrs.	2	13 yrs. 9 yrs.	89
Alyat	0	–	4	18 yrs. 16 yrs. 12 yrs. 8 yrs.	86
Ayel	0		1	22 yrs.	62

entries for sorghum is related to the number of hands available to help with the work especially the number of girls old enough to work in the family (fig. 5). The family of Meri, with two grown daughters, had the most diary entries. The family of Ayel, with no daughters and only one son, had the fewest. With one exception, when the families were ranked in order of the number of diary entries for sorghum, the ranking corresponds with the capability of the female work force (assuming that an older girl is more capable than a younger). The one exception was Lopuka who had one daughter of 24 and one of five – apparently a good female labor force. However, this was the only wife with no sons at all.

We can make inferences about the cattle wealth of the various men as follows. In order to marry, a man must give cattle to the relatives of his bride and also keep enough to provide for his family. A man can marry several times, but only if he is wealthy in cattle. It is reasonable therefore to conclude that Noa was the wealthiest man in the settlement; and the family of Angolere (then dead) was the second wealthiest. It is more difficult to estimate the cattle wealth of the four men who had only one wife, but there is some evidence as follows. Kiyatak was dead and his four boys were aged eight to eighteen. The older two helped a few days during the year with the field work connected with the growing of grain, but most of the time all four were away at the stock camp, rather than in the settlement. This would indicate that there was a sizeable number of cattle for them to look after.

Lourien and his wife were still young (their oldest child – a girl – being fourteen) and he might well marry again before his oldest son – aged six – was of marriageable age.

We can, therefore, infer that Aburra and Logono were the poorest of the men in the settlement. Logono had the most urgent demands on his herds, since his eldest son was 36 years old and still unmarried; while Auburra's eldest son was 22.

Figure 4 shows that only the families of those men we inferred to be the poorest in cattle – Aburra and Logono – spent a significant amount of time at growing millet, which is a luxury crop (the Karimojong say "it tastes like sugar") and can be used in local trade.

Thus, the information in the diary reflects a much more complex situation than is avowed in the Karimojong self-image, "The women take care of the agriculture." All families cultivate sorghum – which is the most important crop – and although the labor of the women and girls is probably the most important, the men do help in the fields to a considerable degree.

Millet, on the other hand, is a crop which is cultivated only by certain families. It would seem that the men of the families poor in cattle are mainly responsible for this crop.

Thus quantitative studies of actual behavior patterns, incomplete in many respects as they are, revealed in these two instances important differences between self-image and behavioral reality. Only by focusing on the actual behavior patterns were we able to appreciate the complexity of Karimojong herding practices, and sexual division of agricultural labor activities, which are both in marked contrast to the simplistic way the Karimojong generalize about these activities.

The complexity of herding behavior revealed by detailed observations made it evident that herd movements were a response to many different factors which had to be analysed and understood, not simply a back and forth movement set by the calendar. Cattle movements were the resultant of a number of different forces acting on each herd, which varied in intensity and direction with respect to every herd at any particular time; and the same herd at different times. This implies that if the magnitude and direction of the multiplicity of forces acting on a particular herd could be measured, its location at a particular time would be predictable (a theoretical rather than a practical possibility, because of the difficulties in measuring such forces).

Likewise, a quantitative study of the actual work behavior in a Karimojong settlement demonstrated that Karimojong men participated extensively in agricultural activities, in marked contrast to the Karimojong generalization about themselves which denotes agriculture as “women’s work”. But once again, there was great variability in the pattern even within a single settlement. Some men spent a great deal of time on agricultural work; others spent almost all of their time with the cattle, and were almost never in the permanent settlement.

To try to decide whether Karimojong society in some simplistic, “ideal type” sense is or is not “nomadic”; whether it is “pastoral”, “agricultural”, or “mixed economy”, is a mistaken enterprise, because it results in meaningless conclusions. It is the variations in individual behavior patterns, not the modal behavior for the entire tribal group, which give the greatest insights into how Karimojong society functions within the limits imposed by the environment.

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Differential Access to Pasture in a Nomadic Society: The Yörük of Southeastern Turkey[1]

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ALTHOUGH PASTORAL nomads virtually everywhere depend on access to agricultural products, neither the actual exchanges nor the structural framework through which they are transacted have been systematically investigated. Certain generalizations are forwarded regarding the place of nomadic pastoralism in the Near Eastern rural economy, but there is a lack of field studies treating a specific system of exchange among specialized herding and farming populations.

The following discussion will focus on selected aspects of such a system of "peasant-nomad" interaction with respect to the Saçĭkara Yörük of southeastern Turkey. Choosing one of the many variables which operate to regulate continued inter-specialization exchange, this treatment will attempt to explicate processes of pasture acquisition by the pastoral nomads. The analysis will show that as rented pastures become increasingly expensive, a few members of the society are able to transform a general economic hardship to personal gain. Many dimensions of Yörük internal organization and migratory schedule become more intelligible when related to this adjustment to a politically dominant non-Yörük economic system which controls access to the resource most crucial to animal husbandry: pasture. A more general, albeit negative, conclusion of this study is that the mechanisms of resource allocation in this society cannot be adequately described by simple reference to the physical environment, or by postulation of a regional bias for optimum resource exploitation through specialization.

One cautionary note before proceeding. As is brought out by several essays in this volume, there exist certain terminological problems concerning the rubrics "peasant" and "nomadic pastoralist", particularly as they imply an unwarranted dichotomy within what amounts to an ideal typology. Without pursuing the matter, I would like to point out that the agricultural populations in question husband small animals as a secondary but important source of income and food. Likewise a number of nomadic Yörük, although relatively small, maintain fields in villages in the area of winter pastures which they either farm themselves or give over to share croppers. There are two Yörük villages, not discussed here, which are settled by the Saçĭkara (cf. Bates, 1971). Sedentarization is now and has been a continuous process, accompanied by the less frequent return of some settled families to nomadic pastoralism. Several have repeated this cycle more than once. All this is to say that these terms – nomad and peasant – will not be used in a mutually exclusive manner or to denote cultural types.

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Moreover, there is no "nomad" or even Yörük ideology operative at the discernable level that transcends rational economic motivation or stark necessity in determining whether a household remains nomadic or takes up sedentary specializations. Most of the farming communities are ethnically or religiously distinct from the Yörük. However much the Saçĭkara may look down on other ethnic groups, their attitudes towards farming or other specializations are largely neutral, and vary among individuals according to how each perceives his own self interest. The only livelihoods excluded by ideology are those involving professions held by Islamic thought to be unclean. In the subsequent discussion of migratory schedule, residential pattern and division of wealth among the Saçĭkara, I shall detail how village-owned pastures are distributed among non-village herds. The transactions which achieve this must be seen not as a specifically "nomad" response to "peasants", but rather reflecting the inclusion of all participants in a fully cash economy.

The sheep herding Saçĭkara tribe, whose major nomadic segments are found today in southeastern Turkey, exemplifies a pattern of pastoral land use common to most mountainous regions of Turkey. For the Saçĭkara and neighboring tribes, the migratory schedule is narrowly determined by the agricultural cycles of the villages through which they pass, and from which they secure grazing lands. Studies of pastoral nomadism have usually emphasized the limiting variables of seasonal change in pasture, the needs and tolerances of livestock, and the character of approach routes to grasslands. In the case of the Yörük, the social environment in which they move must be carefully considered. Clearly the physical environment and the needs of the livestock establish the outer parameters of seasonal movement of the pastoralists. However, the actual order of migration, the residential pattern at any given time, and most importantly, the exercise of rights to grazing are largely conditioned by contractual relations arrived at with sedentary landowners. Furthermore, it is the process of negotiation and formal contract which underlies the division of wealth within the nomadic society.

In terms of nomadic pastoralism, the Yörük may be an extreme case in that presently all their available pasture falls within village borders, leaving them no intrinsic claim to grazing. All access must be negotiated anew each season with non-Yörük title holders, most often with village officials competent to dispose of village commons (mer'a), but secondarily with large landowners in the region of winter quarters. It is possible that the unusually heavy dependence of this tribe on external relations for access to basic resources will illustrate less obvious, but similar processes elsewhere.

The migratory pattern is one common in most mountainous regions of the Near East. Domesticated animals are supported in numbers beyond the minimum carrying capacity of any given pasture by the successive exploitation of climatically different altitudinal zones. Thus the area traversed by the Saçĭkara is ecologically highly diversified. The tribe passes annually up from winter quarters in Īslahiye, Kilis and Kĭrĭkhan, at the 200–500 meter level, through the Ahĭr range in the lower Taurus (ca. 2300 m.) to summer pastures in the Binboğa (elevation: 2830 m.), Tahtalĭ (2850 m.) and Dumanlĭ (2875 m.) mountains of the Middle Taurus in the vicinity of Sarĭz, Tomarza and Pinarbaşĭ administrative centers.

The ethnic composition of the regions used by the tribe is complex but, with the exception of the Yörük, there is little economic specialization along such divisions. The settlement pattern often represents political pressures arising outside of the district, and most communities in a particular zone irrespective of ethnicity pursue similar economic activities with a common technology. Sunni Kurdish, Arab and Turkish villages predominate in the south, the area of winter pastures. The route between summer and winter pastures passes through both Sunni and Shi'ite Kurdish and Sunni Turkish communities. The summer grasslands themselves are held by Afşar Türkmen, Circassian, and Shi'ite Kurdish villages. These ethnic differences only slightly affect the Yörük, as economic exchanges with villagers are not significantly influenced. They do, however, preclude intermarriage and often make settlement by Yörük unprofitable unless in large numbers with government support.

The Saçĭkara winter in a long plain bounded on the seaward side by the Amanos Mountains (Gavur Dağ) and extending southward to the Amik plains in Hatay. The climate is that of the northern Syrian steppes, with light snowfall only in the northern part. The southern extreme is thus the first set of pastures to become dessicated in the spring. In the winter quarters (kĭşlak) all available pasture is in the hands of villagers and is contracted for upon cash payment for aspecified season. The written contract is usually drawn up between the village headman (muhtar) or private landowners and a Yörük herd owner, the latter assuming full responsibility for the collection of rent and possible damage fees from other sub-leasees. The contract specifies the total cash rent for the pasture, its borders and the date by which it must be vacated. Pasture fees are calculated per tract of land by the villagers, while among the Yörük these are prorated per head of mature sheep, ranging in the case of the latter, from 9.00 to 20.00 Turkish lira ($ 1.00 = 12.00 T.L.) in *kĭşlak.*

The usable terrain itself is unevenly distributed between non-arable hillside scrub-lands and the more extensive fallow grain fields. Winter pasture everywhere is exhausted by late April. The tribe, though, begins to move to summer pasture before then. This is in order to avoid difficulties that occur if they remain in the winter pastures after crops begin to develop. Keeping their herds away from cultivated fields during this season is difficult and there is a greater risk of conflict with the peasants and landowners if they remain too long in the lowlands. The threat of conflict and damage claims also serves an ecological regulatory function in preventing over-grazing of pastures in which the occupant has no proprietary interest, and which he is inclined by paying rent to over-exploit.

The summer pastures (yayla) are situated in Kayseri province. These lands are held by agricultural populations who, because of severe winters, cannot fully exploit them for animal husbandry. The village herd size is regulated both by the amount of hay which can be stored for winter feeding, and by the ease with which pasture pays a profit to the village treasury by rental to the nomads. Whereas the environment creates the condition of excess pasture in summer, what is done with it is determined by economic return. They could in fact exploit the common pastures to a greater extent by bringing in herds from elsewhere for summer fattening but, by leasing the land to the Yörük, they secure a good return with little effort or risk. The grazing is exclusively wild semi-Alpine grasses, with few fallow grain fields available, except, briefly, just prior to decamping in the fall. The pastures themselves are situated at considerable distances from the villages to which they belong. Although large tracts of grazing area might result from contiguity of the individual pastures, the boundaries established by legal title delineate the units leased by the nomads, and mark the division of grazing territories among camp groups.

The movements of the pastoralists are limited in an absolute sense by the physical tolerances of their livestock and the ecological setting. Yörük sheep are a variety of the broad tailed strain adapted to fairly cold conditions, but not resistant to hot weather or heavy snowfall. Winter pastures are unusable during the summer heat which begins in early May, lasting until late September. Summer pastures are snow covered in most cases until late April, and snow remains in patches through July and middle August. In all cases, Yörük are on the *yaylas* before the disappearance of snow fields, which are often important sources of water. The threat of late or unseasonable snowfall in the valleys leading up to the pastures is, paradoxically, more critical than in the summer pastures themselves. This is because herds on the road are being pushed through in forced marches, undernourished and highly susceptible to disease. Sudden snow, cold rain or stream flooding is a major concern to the herdsmen. Not every herd owner, however, is able to cope with this through the same migration strategy. Those who leave early find choice grazing but risk higher animal losses. Those who move later in the season bring their herds over roadside fields almost totally devoid of grazing and must push through in forced treks of twice the normal daily length. Those who adopt the strategy of early departure from winter quarters, lessen their risks considerably by leaving the winter wool on the animals. This is not a viable option for middle or poorer nomads who need the immediate cash from wool sales to meet obligations to creditors.

The trek down to winter quarter is impossible until the temperature has dropped in the valleys that must be traversed. This happens in mid-September and allows serious discussion to begin among the nomads about their return south. This journey, lasting a month and half, is then a more comfortable migration for the animals as grazing is plentiful on the recently harvested fields. No attempt is made to move south until it is clear that crops are off the fields along the route, and cotton picked in the area of winter residence.

The approach to the summer pastures from the south follows a course of connecting mountain valleys leading some 200 kilometers from the winter base to the upper summer camps. The tribe makes two major moves a year: spring and fall. The remainder of the year is passed in relatively stable encampments. Forage and camping sites are particularly limited during the spring migration owing to agricultural activity, but are prevalent during the fall move when fallow grain and picked cotton fields become available. The right of nomads to pass through village lands along their migration route is recognized by local authorities, although this is customary and not statutory. Conflict over damages to crops and theft of animals is normal during the month-long spring migration.

Yörük herds are in poor condition by mid-point in the march and often find supplementary illegal grazing in roadside fields of winter wheat. On the other hand, villagers take advantage of the shepherd's difficulty in keeping flocks together in broken country by stealing stray animals. At the same time, occasionally village animals find their way into nomadic herds. Although wealthier nomads have useful personal contacts in most of the villages traversed, it is only the presence of governmental authority which restricts violence to isolated incidents and enforces settlement of crop damages.

In this sense the interaction of the two modes of production represents a balance of power, imposed and regulated by a force outside the immediate ecological system. It is clear that without the government's intervention, the amount of land under cultivation would be significantly diminished because of nomad depredations. The threat of animal damage without hope of compensation would render many now marginal fields uneconomical.

The local Yörük tribes number approximately 175 tents distributed among named patrilineages (kabile) in a non-ranked segmentary descent system. The largest tribe is the Sacîkara Aşireti, consisting of 139 tents in 12 *kabiles* (see table). Also, there are 173 households of sedentary Yörük who maintain their lineage identities and who interact on a regular basis in social and economic matters with their nomadic relatives. There is no formal political structure uniting the lineages apart from descent ideology and the occasional consultations among lineage leaders. These men (*ağas*) hold no recognized office but exercise limited control through economic sanctions and the manipulation of public opinion. Leaders emerge largely by their wealth and ability to sway the opinions of others, both closely related personal attributes. There is no one-to-one correlation of a leader to a named lineage. Rather a larger group may have two or more, while entire small lineages may lack an effective one. There are approximately nine individuals from six *kabiles* who are widely recognized as lineage spokesmen and who are referred to as *ağas* in that sense. As leadership is not expressed through formal office, succession, if that can be said to apply, is equally unrestricted by qualifications other than wealth and effective social status. No chiefly families maintain hereditary control.

The government recognizes no tribal leaders comparable to elected and formally installed village officials, but the practical dictates of administration bring certain lineage leaders to the fore.

Although the residential pattern shifts from season to season and from year to year, there is strong localization of lineage membership along lines of patrilineality. Brothers and the sons of brothers commonly camp together and reference to this agnatic core is used by the Yörük to describe any large summer camp group or migrating group of households, for example, "Osmangiller" (House of Osman). Camp groups *per se* are not named, nor do they perpetuate themselves intact from year to year. Camp groups are distinguished by the name of the *yayla* on which they reside during a given summer.

While the existence of any such camp group is related to the general need for co-operation in herding and security, its composition is more directly conditioned by the manner in which grazing rights are acquired. As will be seen, those with economic power prefer to select patri-kin as their debtors and dependents. This arises partially because clients who are kin are less apt to default owing to possible inter-lineage hostility which may ramify up through sections to include households normally on good terms. In addition to such practical considerations is the normative system whereby those with economic and social power are expected to aid patri-kin, and even expensive credit is viewed as supportive action.

There is no collective ownership of seasonal grazing rights that is not the result of specific contractual agreement among would-be partners, one of whom must bear legal responsibility for the payment of rental fees to the non-Yörük title holders.

On the road, where no grazing fee is paid, any tent can camp where it pleases with no permission needed from possible other Yörük transient occupants. Similarly, it is normal for tents starting their trek between lowland and mountain pastures to camp for a few days without payment on leased land held by lineage relatives or families with whom they have close dealings. This occurs only when the pasture in question lies near the route northward, and thus benefits those who camp at the southern extreme of the winter quarters. Apart from this, any incursion into leased land held by other nomads means conflict. The threat of trespass by neighbors seeking free grazing, then, is a common rationale for co-lineage members to camp together. Most of the larger lineages, however, are factioned by feuding, often which arose ostensibly over the problem of summer pasture demarcation. These feuds, and accompanying splitting, sometimes result in realignments which separate brothers, or first generation descendants of brothers. Thus the product of hostility can be the formation of small groups in a manner contrary to Saçikara genealogical belief which would call for the solidarity of brothers and the sons of brothers. Such factioning does not undermine, however, the overall pattern of highly agnatic camp group composition.

The Saçikara maintain that among the twelve core lineages (köklü), there is none better than any other and that among families no household is superior by birthright. Economic stratification, the basis for social differentiation in most societies, is less marked than among village populations in the region. Certain men, though, are able to acquire more wealth and power than others and can maintain this in the face of natural disasters which periodically reduce others to near ruin.

Formerly, competition for good grazing, if important at all, would occur between lineage divisions in the tribe, with poorer families of strong lineages benefiting to the same extent as their richer kinsmen. Today, despite an "egalitarian" ideology with obscures this, individual wealth is crucial in securing pasture. Wealth however, is directed to this end in a circular manner and it is not the case that those with more capital or credit possibilities can simply monopolize the choice grazing tracts. There are a number of factors which tend to equalize access to grazing, and to ameliorate the divisive effects of a cash rental system whose economic impetus would be to put the rich herder on the best pasture and the poor on the marginal sites. One, the cost of grazing within a leased territory is reckoned *per animal*, not per household or herd, thus the price, though not necessarily the effective cost, of grazing is equitably distributed. Furthermore, within any pasture rented, all herds graze at will and no family from among the contracting parties is able to monopolize the better areas.

In opposition to such leveling institutions, what does decrease economic mobility is the dependence of animal owners on ready credit, supplied here by the wealthier tribesmen. This is somewhat analogous to situations elsewhere, such as in Iraq and among settled Kurdish tribes in Turkey, where tribal leaders have gained legal title to formerly open pastures (Barth, 1953). Here, however, the leaders generally remain nomadic but use their influence to secure effectively cheaper use of, rather than title to land.

Differential effective cost of pasture, for categories of wealth among the Yörük, is a function of their involvement in a cash economy. That they are so involved is not as unusual a circumstance as might be thought from the literature. Barth (1961) and Hütteroth (1959) detail cash transactions, for the Basseri and Kurdish tribes of eastern Turkey, respectively. Kolars describes Yörük economic exchange with a village in Antalya, with respect to its importance in the agricultural system (1963). Xavier de Planhol discusses the geographical parameters of such interaction for a region as a whole (1958). But otherwise the economic context of nomadic pastoralist groups in the Near East is little explored.

For purposes here, suffice it to say that the value placed by the Yörük on animals and animal products reflects the prevailing conditions in the best of several regional markets. Livestock value, of course, is adjusted by cost of credit in sales among Yörük which varies according to length of payment, economic

Nomad Herd Size Per Lineage
(Survey taken in late summer 1969 includes previous spring's lambs)

	Patrilineal Descent Group	*No. of Tents*	*25*	*50*	*75*	*100*	*125*	*150*	*175*	*200*	*sheep* *225*	*250*	*275*	*300*	*325*	*350*	*375*	*400*	*425*	*Std. Dev.*
(Yörük)	Göğebakanlar	44												318.8						194.2
	Arabalar (Arap Aliler)	28								232.9										135.1
	Çavuşlar	13											283.8							74.9
	Satilar (Sadikoğullari)	12									241.3									211.7
Aşireti	Kelebekler	11													333.6					99.5
	Daz Kirliler	10											293.5							176.2
	Haytalar	3					160.0													36.1
	Cüce/Sermayeler	3											316.7							76.4
Saçikara	İzmirli	3																	433.3	208.2
	Kölemenler	2									250.0									212.1
	Tirtarlar	2							200.0											70.7
	Kabaklar (Izmirli)	2								225.0										106.1
	Haci Çiller (Izmirli)	2															400.0			141.4
Sari Keçililer		26							192.8											171.6
Osmanli		8									255.6									153.3
Tekeli		2									250.0									0.0
(other)		1			110.0															0.0
Total Tents		172											median = 245				Overall mean = 268.35 Std. Dev. = 164.50			

standing of buyer, and demand for certain types of animals within the tribe. This latter circumstance is due to the fact that while Yörük sheep are sold per weight in markets, Yörük themselves cannot purchase non-Yörük strains for breeding stock. The strain of sheep herded by the Yörük nomads (Kĭcĭk/Gĭcĭk) is of the same general Anatolian fat-tailed breed (Ak Karaman) tended by villagers in the region. However, the Yörük state that village sheep do not do well when kept in the open, and cannot withstand the often cold nights of both *kĭslak and yayla*. Conversely, the Yörük strain suffers high mortality rates when maintained throughout the year in the lowlands, thus making them unacceptable to sedentary pastoralists. It is possible to distinguish Yörük strains from at least two other common varieties of sheep in the region by appearance. Because these strains of sheep are not inter-bred, exchange of animals among Yörük usually takes place outside the market place, but is still reckoned in cash. Accordingly, the price of breeding animals after a bad year may be higher among Yörük than the market value of equivalent non-Yörük stock.

Wool prices are set by national markets, as are those of white cheese, though the latter are influenced by monopolistic practices in the purchase of the raw product by entrepreneur tribesmen. Furthermore, a shepherd's labor, other than that of sons, has a cash value directly mirroring the going rates for such work throughout the region. No labor in herding is contributed to any other tent without cash payment or specified reciprocity. All barter exchanges of significance are calculated against market prices. Need on the part of the purchaser does not affect price except insomuch as it affects withholding power and ability to negotiate as an equal. Richer herdsmen are more likely to sell in a seller's market and buy in a buyer's market.

The amount of goods consumed which are produced by the households varies from season to season. In winter when there is no fresh milk only stored cheese, butter and, at rare intervals, meat, are supplied by the domestic unit. Bread, the principal food-stuff, is made from wheat-barley flour purchased in the market, as are *bulgur*, rice, dried fruit, tobacco, tea and sugar. The capital outlay for tents, camels and equipment, including large tents for the flocks in winter, is much the same for all wealth categories. This means the relative operating cost for small herds is higher than for large ones. Concomitantly, the economic withholding power of small herd owners is less, and their credit expenses higher. As pastures are obtained through cash credit for most herders, their involvement in the national market system is of importance.

The residential unit, or camp group, closely mirrors the tribe's integration with the local agricultural and national economic systems. The pastures, both in winter and summer, are let by the villagers as a whole for a flat fee, irrespective of how many animals or households make use of them. This fee is roughly representative of the size and quality of the tract rented. No Yörük family can afford to reside alone on pasture sufficient for more than its own animals. Families camping together share their grazing expenses prorated *per capita* of livestock (see also Beşikçi, 1969: 116–118). Annual cash expenditure for pasture rights alone averages somewhat more than eleven per-cent of the value of the breeding stock carried throughout the year. If grain or feed is purchased in winter, this figure may double. This, combined with shepherd's wages for families with insufficient manpower, maintenance of camels, losses due to disease and normal attrition, considerably narrows the profit margin.

The total amount of grazing available and the nature of its access routes determines the total animal population which can be supported by the tribe. How this animal population is distributed among family units is a function in part of differential ability to negotiate favorable sources of grazing.

Both summer and winter pastures are commonly leased in advance of the arrival of the herds, and there is no benefit to be had in being first in line of migration in this respect, as all tents are equally able to send a representative ahead to contract for grazing. One might expect the spatial distribution of tents to change greatly from year to year as no ideology of territoriality can be pervasive over legal claims of pasture owners and their desire to rent at best rates for cash. As we mentioned, a very definite pattern of camp groups based on patri-lateral kin ties does emerge as a result of primary lease holders favoring patri-kin as co-resident debtors.

The distribution of tents during the two seasons of pastoral rental reflects the actual contracts arrived at by a small number of household heads who negotiate with owners of grazing land. Thus, the fact of co-residence implies, in many cases, economic dependence or at least the enforced co-operation with the primary lease holder of his neighbors. Clientship, as much as exists, is generally maintained along lines of kinship. While a dissident member may easily attach himself to another camp group, or shift allegiance to an alien lineage, he will experience difficulty getting the same support in crisis that he would expect from close patri-kin.

Milk is available for sale from late March to middle July. Sufficient milk, however, cannot be sold prior to spring pasture to purchase this grazing from such proceeds alone. Few animals are available for ready sale during either season of pasture rental. Wool, which could serve as partial payment for summer grazing, has to be sold by the majority of tribesmen in the area of winter quarters in order to meet debts to local shopkeepers for foodstuffs purchased during that season on credit. Ideally, cash earned by the marketing of these products might be carried over to the following period of pasture rental. However, this is impossible for most families owing to their often longstanding indebtedness arising from pressure to increase breeding stock by credit purchase of animals or from the need to replenish herds decimated by disease.

Thus, milk becomes the idiom of credit for grassland as only it offers the potential for local middlemen to capitalize on simple marketing techniques, converting a product difficult to transport and store into marketable cheese. While each household makes a variety of cheeses for its own consumption, the quality acceptable in the urban market is unobtainable except when done on a fairly large scale. This manufacturing is commonly in the hands of lineage leaders who draw on patri-kin for supplies of the raw product. The parallel development of high grazing fees, together with the concentration of the dairy business in the hands of lineage leaders, is not accidental. The semi-annual need for large amounts of credit has opened the way for those with sufficient capital, or large herds, to secure a steady supply of milk at sub-market prices. Fall pasture money is advanced against promises of milk in the coming spring and summer. The price is fixed by collusion among a limited number of buyers at about 20% below market value, as represented by non-Yörük village dairies. Indebtedness influences the residence pattern further in that once the milk is sold in advance of delivery, the seller is obligated in most cases to live within a half-day's walk of the dairy tents, which the owner locates near his camp at a good source of water.

The need for credit, even when not phrased in terms of milk, exerts strong pressure on kinsmen to cluster around the lineage leader, who is able to negotiate for desirable tracts with the advantage of having a reputation for prompt payment and settlement of possible damage claims. Household heads, and in particular important men, cultivate friendship in the village which facilitates pasture rental. Largely as a result of this there is a strong tendency for lineages themselves to localize, with camp groups returning year after year to the same pastures. Camp groups in winter quarters are much smaller than in summer, ranging from two to five tents as opposed to the summer average of six households with a maximum concentration of 25. Nevertheless, in winter there is a similar bias for households to return each season to a limited number of the actual pastures available.

While there are other social and cultural pressures for the co-residence of patri-kin, the state of partial economic dependence clearly lessens the options open to any individual tribesman. More critical to economic mobility is the fact that, although rich and poor alike are utilizing the same quality grazing, the effective price paid for access is substantially more for those who have to sell milk futures to pay for it. Also, there is more pressure on owners of small herds to over-graze and thus to run down their animals. Richer men are able to leave diminishing pastures sooner, supply their herds with grain feed in times of unseasonal snow, and pass over the often difficult route up the mountains before the main body of tribesmen. By this means they are able to use their cheaper access to pasture to ensure their herds against loss of breeding stock, which is a constant threat to the average herdsman. This is not to suggest that economic influence is used to secure formal political office, as has been the case with many settled tribes, but rather it is used to maintain preferential economic status through manipulation of the credit requirements of their kin.

In summary, many aspects of nomadic Yörük society represent adjustments to the fact that the land they exploit lies beyond the limits of their own political economy. While the habitat and requirements of their flocks determine the outer parameters for their movements, the details of their migration and residence are conditioned by their relations with sedentary, non-Yörük populations. The order of migration is seen to be influenced by the state of indebtedness of poorer members, who must shear their animals before leaving winter quarters and thus cannot risk moving in the first ranks of upward migration when grass is best. Their need to maximize grazing fees, too, influences their later start to and from summer pastures. Further, it is the growth cycle of village crops which provides the direct impetus to migrate for the tribe as a whole. The specific mechanism of adjustment to sedentary society consists of contractual arrangements for access to pasture. Co-residence in the two seasons of long encampments is, in effect, a statement of the negotiations carried out between those who use and those who hold title to land, and is in itself a major contributing factor in the seemingly increasing stabilization of internal distinctions of wealth within the tribe. Different wealth categories within the tribe thus react differently to the demands of a fully cash economy. The lineage leaders and wealthy are able to transform an economic burden, that is, high grazing fees, to their own advantage by supplying credit. On a more general level, it becomes clear that there is no teleological drive within the local ecosystem towards overall maximum resource utilization through specialization. Rather, one sees attempts by all populations concerned each to maximize its own self-interest. While the resulting pattern of land use may express a high degree of mutuality in exchanges, or efficient resource exploitation, the nature of the symbiotic relations between settled and nomadic populations represents a balance of power, rather than a homeostatic economic process. The government's role is largely one of mediation. Without its exertions, however, the local balance of power, and thus the nature of economic exchange among specialized agricultural and pastoral populations, would be quite different, here to the detriment of agriculture and the total efficiency of land use.

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Multi-Resource Nomadism in Iranian Baluchistan[1]

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MANY PASTORAL TRIBES of the Iranian plateau region migrate seasonally up to and down from the plateau or the mountains that make up its rim. The Khamseh and Qashqai confederacies of Fars province spend the winter on the plains between the southern Zagros and the Persian Gulf and make a major migration to the north past Shiraz to the upper valleys of the Zagros for their summer camping ground. As winter approaches, the migration out of the mountains and back to the plains takes place (F. Barth, 1964). The winter camp of the Bakhtiari is in Khuzistan; as summer approaches the arduous journey to the east across the central Zagros to the summer camping area in the vicinity of Isfahan begins. Migration back to Khuzistan takes place before the snowfalls block the route through the mountains (C. Coon, 1964; D. Brooks, personal communication). In Azerbaijan, the Shahsavan migrate from southern summer grazing areas in the Savalan and Buzgush mountain ranges to winter camping grounds in the Moghan plains to the north (R. Tapper, unpublished manuscript).

These are pastoral migrations. That is, the goals which the tribesmen aim to further by the migration are primarily those having to do with the welfare

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[1] The first debt of an anthropologist is always to the people who put up with his intrusions confusions, and heresies. Thus it is the Yarahmadzai, and especially the Dadolzai among whom my wife and I lived, who must first be thanked. That I have used their traditional name, rather than the current Iranian period "Shah Navazi", is in no way meant to be a slight to them or the Iranian Government, but rather a sign that they too have a history and tradition that must be recognised along with the new imperative of integration into the broader modern world.

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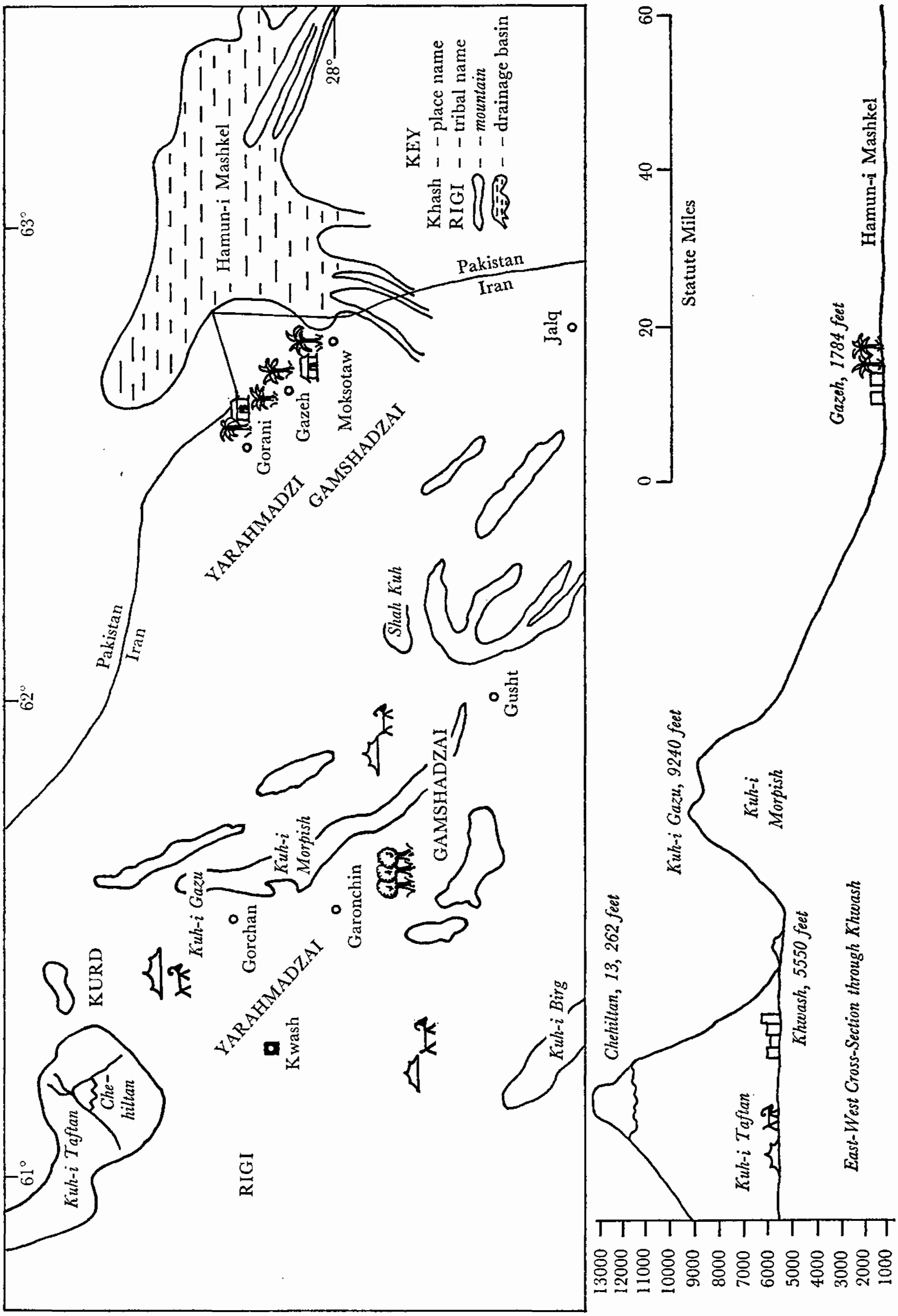
KEY
Khash - - place name
RIGI - - tribal name
- - mountain
- - drainage basin
Hamun-i Mashkel
28°
63°
62°
61°
Pakistan
Iran
Jalq
Moksotaw
Gazeh
Gorani
GAMSHADZAI
YARAHMADZI
Shah Kuh
Gusht
Kuh-i Morpish
Kuh-i Gazu
Gorchan
Garonchin
KURD
YARAHMADZAI
Kwash
Kuh-i Birg
Kuh-i Taftan
Che-hiltan
RIGI
0
20
40
60
Statute Miles
Hamun-i Mashkel
Gazeh, 1784 feet
Kuh-i Gazu, 9240 feet
Kuh-i Morpish
Chehiltan, 13, 262 feet
Khwash, 5550 feet
Kuh-i Taftan
East-West Cross-Section through Khwash
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000

of their flocks and herds. By moving their animals to summer and winter quarters, the limitations on the welfare of the flocks and herds are those of the most advantageous conditions of each of the areas, since the less favorable conditions are avoided by flight. In the cases mentioned above, the seasonal migration between altitude-defined climatic zones takes the animals to the area of best available pasturage and away from detrimental climatic extremes. This pattern of pastoral migration is not, however, universal in the plateau area. In contrast is the multi-resource nomadism of the Yarahmadzai and Gamshadzai Baluch. This pattern of movement and resource extraction raises questions about current conceptualizations of nomadism which will be taken up following the ethnographic data.

Baluchistan can perhaps be best delineated by using two cultural criteria: self-definition by the indigenous population and language usage (Baluchi being an Iranian language in its own right). Baluchistan, thus defined in cultural terms, is politically separated into the southeastern most province of Iran and the western part of West Pakistan. The region of concern in this paper is the Sarhadd plateau of Iranian Baluchistan and the adjoining eastern lowlands of the Hamun-i Mashkel. The Sarhadd is the northern-most region of Iranian Baluchistan (Spooner, 1964), and is characterized by a relatively high altitude (the plains of the plateau are over 5000 feet) associated with cool temperatures, a topography of broad plains irregularly cut by individual jagged mountains, and the Taftan mountain range with Chehiltan, its active volcanic cone of over 13,000 feet. The climate is subtropical steppe with cold winters, and hot summers. Annual precipitation, most of which usually falls in the winter, ranges from 0 to 6 inches. Natural vegetation is mainly grass and other herbaceous plants sparsely distributed singly or in patches but with sizable areas where vegetation is largely or entirely absent. To the east of the Sarhadd plateau is a vast desert basin (altitude 1500 feet) into which runs the large Mashkel river. The river, however, is absorbed into the desert, which, lacking precipitation of its own, is almost completely barren of natural vegetation. Its tropical desert climate of mild winters and hot summers includes in addition the notorious Wind-of-one-hundred-and-twenty-days, hot, dry, violent winds which blow from the north throughout the summer.

The two tribes whose adaptation is to be discussed are the Yarahmadzai and the Gamshadzai. But before describing the major features of this adaptation, a cautionary note must be sounded: A great many historical processes and current social factors are ignored here, as they are not immediately relevant to the particular point under discussion. But these complexities are of extreme importance in understanding the place of these tribes and the entire area in the complex mosaic of the traditional Iranian world and the current development of the Iranian nation, and in understanding the impact of these phenomena on the tribes. The crucial changes between the relative political independence up to the end of the Baluch period (1928) and incorporation into the state of Iran in the current Iranian period and the adaptational concomitant of these changes will be touched upon shortly. However, the major elements of adaptation to be described are constants throughout these periods and have been only minimally affected by the myriad of non-indigenous intrusive elements.

The Yarahmadzai and Gamshadzai are two Baluchi-speaking tribes of several thousands of souls each. Their organization is based upon a patrilineal idiom, all members being patrilineal descendents of the founding ancestor of each tribe. Each local community is identified with a shallow patrilineage (four generations in depth and seldom larger than 100 souls), even though families of other lineages are members of the community. As local communities are often much smaller than the membership of a lineage, more than one community can be identified with a given lineage. The headman is one of the able elders of the main lineage of the community, and the male adults of that lineage have a greater weight in community decisions than members of other lineages. One of these shallow lineages is the chiefly lineage and provides the tribal Sardar. As a result of preferential bilateral endogamy – the closer one marries, patrilaterally or matrilaterally, the better – social integration at this local level takes something of a bilateral form with matrilateral and affinal ties reinforcing patrilineal ties.

Let us now follow the Yarahmadzai and Gamshadzai through their yearly round of food extraction activities. *Zemistan*, or winter (December, January, February), finds the tribes on the Sarhadd plateau. Both tribes have customary areas, that of the Yarahmadzai being bounded on the north by the Taftan mountain range, in the east by the Morpish mountain range, by Khash in the west, and in the south by a grove of wild pistachio trees that marks the boundary between the two tribes. The total area is approximately 3600 square miles. The Gamshadzai territory extends into the Morpish range in the east and south to Gusht. Each local community has a customary winter area and for the most part takes the form of a camping group consisting of from five to twenty black goat-hair tents. Combined flock-herds of sheep and goats and separate herds of camels are taken out daily by shepherds and camel boys, but the vegetation is dead or dormant and the animals have to live primarily on the accumulated fat of the previous spring. The hot summer drought followed by the cool winter (temperatures to freezing at night) has a uniformly killing effect on pasturage throughout the area, so there would be no gain in moving to other parts of the tribal territory. The strategy is to sit tight, to protect the animals from the cold by means of housing the adult sheep and goats in the tent at night, building shelters in the tent for lambs and kids, and providing blanket-cloaks for the camels, and compensating the lack of pasturage by feeding camels vulnerable because of young or pregnancy with roots, the sheep and goats with chaff and grain (from the limited local wet cultivation), and the lambs and kids with dates, processed date pits, and grain. In a good year, this is the time of the rains and so water is not a problem. There is no food production, from the animals or any other source, at this time, so the tribesmen depend upon stores from the previous productive seasons.

Behargah, or spring (March, April and May), sees the appearance of grass and the budding of plants, thus giving a greenish hue to the sandy and rocky terrain. The winter rains and the run-off from the mountains, in addition to being sparse, are variable and quite unpredictable as to location. The relative availability and lushness of pasturage, therefore, varies from place to place and from year to year within the tribal territory. This is perhaps also affected by overgrazing of particular areas in previous years. The net result is that no camp knows before hand where pasturage will be found, but it is certain that it will be poor in the winter camping grounds of some and perhaps many of the camping groups. Furthermore, the pasturage is never so lush that it is not exhausted in a relatively short time by the starved animals of the camps that converge on the better endowed areas. The spring strategy of a camping group is to gather information about the location of good pasturage, defined not only in terms of quantity, but also in terms of the presence of plants favored by the different species, and to pack up and migrate there. In 1967, the Yarahmadzai camp of Ja'far Dadolzai migrated seven times in this period, covering distances of from one to twenty-five miles; first to the west, then north, west, south, farther south, back to the north, then east. The area to which they had migrated in the south was not a usual one for them; they had not camped there for ten years. But it was unusually well endowed with pasturage, and so they could not pass it up. In this case, as in all others, when and where to move is a subject of constant discussion. Far from knowing ahead of time the location of future camping areas, the tribesmen do not know which direction they will head in on the next migration and often do not decide upon their new location until they arrive there. (Krader's statement that "Pastoralists... have highly predictable movements" clearly does not apply here (1966: 407). Each camping group decides for itself when and where to migrate; there is no coordination or general agreement. The movement of several camping groups to one area is reason enough for other camping groups to avoid that area, if possible, since the greater density of animal population will result in more rapid exhaustion of the pasture. (There are other limiting factors, such as water, to be discussed below.) The net result is a large number of small camping groups, each going in one direction and then another, their migration routes sometimes coinciding, sometimes crossing, sometimes passing in opposite directions.

This movement within the tribal area (and to the areas of adjacent tribes with the permission of those tribes' Sardars) is reflected in and predicated upon the lack of land ownership rules: any camping group can camp in any part of the tribal territory. But there is an obstacle to free movement: wells are owned by lineages and other lineages can use them only with permission of the owners. This permission is often given, but as summer nears and water is drawn for the flocks and herds as well as the tribesmen, the water table, at the best of times 30 feet, lowers toward the floors of the wells. At such times there is great pressure to limit the use of wells to the owning lineage and the consequent denial of access to wells thus limits camping possibilities for lineages away from their own sources of water. Thus access to water is a factor which in addition to location of pasturage must be taken into account by the tribesmen.

The coming of *garman*, the first part of summer (June, July), is signaled by *zard-o behar*, the drying up of the pasturage. In the Baluch period, some of the flocks and herds were taken up to the lower valleys of the Morpish range during this time, presumably because *zard-o behar* comes later at the higher and cooler altitudes. In the current Iranian period, there has been a slow development supported by government aid of expensive wet cultivation based upon the *qanat* (an underground irrigation tunnel) and the combustion engine pump. It is in *garman* that the grain harvest comes, and many of the tribesmen migrate to the several areas of cultivation to harvest and to let their animals graze on the stubble and fertilize the land with droppings.

During *behargah* and *garman* the flocks and herds are giving milk enough for their offspring and for heavy consumption by the tribesmen as well. Milk is consumed in many forms and preserved in the form of *kashk*, dried milk solids, and *roghan-e pas*, clarified butter. The latter especially is sold or exchanged for other products, of which grain is the most important.

Hamin, late summer and early autumn (August, September, October), is signaled by *ruro*, migration off of the Sarhadd plateau to the lowland desert basin of Mashkel. (Note that this migration to the lowlands takes place in the summer, in contrast to the tribes mentioned earlier who spend the summer on the plateau and move to the lowlands in the winter.) The Yarahmadzai pack up and store their goat hair tents, organize a group of young shepherds to look after the sheep and goats, and leaving their tents and sheep and goats on the plateau, they make the eight day migration around the northern end of the Morpish range to the area of Mashkel due east of their tribal territory. The Gamshadzai, heading for the same area, take a more southerly route through the mountains. The tribesmen are migrating to their groves of date palms where they will reside in mud brick huts, harvest and eat dates, and prepare local goods for the return journey. The most important of the latter are dates and date preserve for consumption through the winter, date pits to be prepared as feed for the lambs and kids, salt (gathered from the extensive salt wastes of the central *hamun* area) for year round consumption, and palm fronds which are woven into ropes and cords for use with the tent and baggage. Date groves are possible because of the mild winters and hot summers. It is possible for these tribesmen to cultivate them because water is available with no human investment: rivers drain into this basin and are absorbed into the surface, which results in salt wastes in the center but sandy soil with a five foot water table at the edges. It is here that the date palms can sink their roots to the water and so here that the tribesmen can plant groves with minimal investment and maintenance. But pasturage is almost completely lacking, a result of the combined heat, wind, and lack of precipitation. Sheep and goats would have difficulty surviving; maintaining the well-being of the camels is just possible.

Thus along the western edge of the Mashkel basin is a strip of palm groves with clusters of mud huts. As on the plateau, the Yarahmadzai occupy the northern portion, from Musain-Nahala through Gorani to Gazeh and Kindi in the south, with Tonget, Jwan Khan and Moksotaw farther to the south belonging to the Gamshadzai.

Shawarkashk, the migration back to the plateau, begins *yirat*, the short autumn season (November). Those tribesmen involved in cultivation will plant at this time; those selling their labor in the towns or outside of the province will go off at this time.

Now this sale of labor has not been discussed previously, but it is an essential component of the economy. In spite of the pastoralism and date cultivation, even with the recent development of wet cultivation, the area is so unproductive, and the production is so undependable, that additional resources are necessary. In the Baluch period, the additional resources were gained by extensive raiding, mainly of the Persian peasant villages of the Kerman province but also of caravans to and from India. These tribes were the scourge of the entire region, as Dyer in *Raiders of the Sarhad* (1921) and others have described. Animals, grain, and peasants to become slaves were carried off, and the margin over local use was traded in Sistan for grain, cloth, etc. and in Saravan for dates. In the Iranian period, with raiding suppressed by the Iranian Army, the necessary extra income derives from the sale of labor outside the tribal sector. Grain and supplies are now available in Khash, primarily from Persian merchants, and the long trading migrations to Sistan and Saravan have disappeared.

To sum up the major features of the adaptation: There is a tripartite multi-resource economy of pastoralism, date cultivation, and raiding – labor sale, with limited additions from grain cultivation and hunting and gathering. Within this multi-resource economy, there are two types of nomadism: pastoral nomadism on the Sarhadd and multi-resource nomadism, from the pastoral area in the Sarhadd to the date cultivation area in the Mashkel basin. Each of these kinds of nomadism is dependent upon the resources from the other type: aside from the foodstuffs necessary for sustenance of the tribesmen, the camels and wool bags necessary for transport of the dates are a product of the pastoral sector, and the animal feed and ropes for maintenance of the pastoral sector are a product of the date cultivation. Thus the two types of nomadism and their products are not only cumulative, but also to some extent interdependent, and, together with the other resources mentioned above, integrated into an ecosystem.

It is worth noting here that multi-resource nomadism is by no means unique to the Sarhadd of Baluchistan. In North Africa, for example, one finds a great deal of movement from one type of resource to another: “In the Central Sahara, it is enough for the rain to cause the *taouit* (*Aizoou canariense*) to flower and bear, for the upper part of the Ahaggar to be invaded by whole families, both nomads and settlers, anxious to harvest the seeds.” Likewise with numerous other wild plants and other natural resources (R. Capot-Rey, 1962: 303). And there is no limitation to resources solely the work of nature. In Mauritanian Adrar, northern Fezzan, at Kaouar and Borkou, nomads own substantial date palms or accord them protection. “In these circumstances, the return to the oasis for the date harvest becomes a major event interrupting the pastoral migrations...” (*Ibid.*: 304). And “throughout northern Libya, the nomads have fields in the *oudianes* and palms and olive trees near the villages” (*Ibid.*: 306). As many such examples of multi-resource nomadism can be cited, one wonders why this phenomenon, clearly an important part of the adaptations of the peoples involved, has been hitherto ignored, or at least de-emphasized.

The example of multi-resource nomadism dramatizes, for me, the tremendous conceptual confusion in the study of pastoral nomadism brought about by the use of ideal-typical concepts. Throughout the literature, and particularly plaguing general discussions, we find repeated references to "pure nomadism", "semi-nomadism", "transhumance", and the like. Each ideal type is based upon a combination of characteristics, usually including type of animal, degree and/or pattern of movement, participation in agricultural activities, type of housing. These ideal types invariably obscure through oversimplification and rigidity the variables at play because they ignore the many subtle and gross variations along the dimension of any given variable and because they presume a very limited number of possible value-combinations of different variables. (For a detailed discussion, see Salzman, 1967: Section II.)

In what sense does multi-resource nomadism dramatize the need for reformulation? Here is a case where we must conceptually separate nomadism from pastoralism, and thus take the first and most basic step in moving toward an analytic as opposed to an ideal-typical approach. Nomadism is a kind of movement; for the moment let us say that it is movement as part of the cycle of food extraction. Pastoralism is management of and food extraction from a particular type of resource, domesticated or semi-domesticated animals. Nomadism can be associated with several different types of resources, as in hunting and gathering, cultivation, labor sale, and of course pastoralism. Pastoralism can be associated with the entire range of movement, from none at all to continuous movement. Pastoral nomadism is one set of many combinations in which nomadism and pastoralism are involved.

Even without further refinement, there might be some utility in this approach. For it raises the questions, as yet hardly explored, about the effects of regular movement on social, political, and family organization, concepts of space-time, and values, irrespective of the resources involved, and about the effects of pastoralism irrespective of the amount of movement involved. This approach, thoughtfully tempered with consideration of other variables such as fertility and reliability of the environment, relations with other groups, and involvement in a market economy, might result in some useful insights.

But the conceptual separation of nomadism and pastoralism is even more certain to be of use in the study of pastoral nomadism, for it allows us to examine each of these elements in its full complexity. We can ask who moves, why they move, and how they move. Does the entire social unit move, certain of the local communities, a non-specialized segment of the community, a specialized section of the community? Is the move for the purposes of resource management and extraction, and if so is it based upon attraction or avoidance? What resources are involved? Within what bounds are the movements dependable and predictable? To what extent is coordination or cooperation involved? What are the times and distances involved? Is the movement prescribed, encouraged, voluntary, discouraged, proscribed within the group and within the larger social context? We can ask what part pastoralism plays in the total economy. How are the needs of the animals served? What are the animals used for; what products are extracted in what percentages? What other resources are used, and how does the management of both pastoral and non-pastoral resources support or inhibit extraction from the different types? All of these questions are commonplace for the contemporary ethnographer. But the complex answers are somehow lost when we move beyond descriptions of particular peoples. And yet is is only through the use of such analytic variables and their finely demarcated dimensions in the comparative study of pastoral nomads that we can move beyond *a priori* ideal-types toward empirical correlations of and theoretical formulations about the elements of this adaptation and eventually about their relationships to other social and cultural phenomena.

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Some Demographic Factors Regulating the Formation of Flocks & Camps Among the Brahui of Baluchistan[1]

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THE BRAHUI of Baluchistan inhabit the Kalat District of West Pakistan, formerly one of the largest princely states of British India (third only after Hyderabad and Kashmir). Various forms of land use have developed and continue to exist side by side: there are settled villages with numerous cash crops, small transhumant hamlets which combine sheep and goat raising with subsistence cultivation, and tent camps of pastoral nomads, raising sheep, some goats, and camels. We shall call these niches.

As one would expect, both products and labor flow between niches. While I do not intend to analyze these interrelationships here, I mention it only to note that it is often difficult to analyze processes in one niche without referring to other niches.

In this paper, I shall concentrate on one small aspect of Brahui nomadism, the camp community as an adaptive device, and suggest that in addition to the principles of agnation and affinality found to be operative in the organization of camps, there is a third factor, namely, the formation of the most expedient and manageable flocks as grazing units. This demographic variable, in setting upper and lower limits to flock size has important consequences, within this habitat, for the formation and maintenance of camp communities.

Until the very recent introduction of diesel and electric water pumps to the highland valleys, all Brahui communities migrated, in an alternating pattern, between two distinct ecologic zones, the highland plateaus of Sarawan and Jhalawan (at an elevation of 6,000 feet marking the easternmost extension of the Iranian Plateau area) and the lowland plain of Kachhi (sea level to 500 feet), the northernmost portion of Sind. These zones are separated by the Sulaiman and Kirthar mountain ranges, and a distance, through the Bolan Pass, of only 80 miles. Some settled cultivators still move to their lowland villages and remain there throughout the winter months; while the transhumants leave their highland hamlets and fields sown with winter wheat and migrate to the lowlands on camels, with their flocks consisting predominantly of goats. The pastoral nomadic communities, experiencing little change in technology, continue this alternating use of highlands and lowlands in order to keep their animals alive.

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[1] The data on which this paper is based was collected while living with the Pirrkari nomads (Zaribzai) of Kalat District, West Pakistan, during the summer of 1964. I owe thanks to my Brahui hosts and to the National Institute of Mental Health for the pre-doctoral grant (1963–1965) which enabled me to conduct the research.

The limiting factors in highland habitation for the nomads are temperature and precipitation. Rarely will 10 inches be received in any one-year period and it is mostly in winter in the form of snow. Winters are cold and icy (a mean 8:00 a.m. temperature of 32.7° F.) and most of the 10 inches of precipitation received in any one-year period is in the form of snow. Thus the highlands are uninhabitable in winter since pasturage is not available. The short spring season brings moderate temperatures, which melt the snow and produce an abundance of bulbous and other herbaceous plants. At this time, the Brahui come up from the Kachhi plains. By the end of summer, however, the pastures are drying and depleted and the nomads prepare once again to migrate to the plains.

The limiting factors to nomad occupation are the same on the plains. The Kachhi plain is a level, triangular shaped alluvial plain, running approximately 100 miles from north to south and 45 miles east to west, and is nowhere higher than 500 feet above sea level. Its main characteristics are its levelness, the periodic severe scarcity of water (rainfall averages no more than 3 inches per year) and its excessive summer heat. There are only two main seasons, winter, from mid-November to mid-March, during which time the Brahui are resident, and summer, from April to October. By the time the Brahui reach the plains, the scant summer rains have provided very spotty pasturage. But the most important natural fact about the plains is the 6 river systems which originate in the northern and upland hills and cascade down on to the plain during the summer and early fall. The year-round cultivators (non-Brahui Jats, see N. Swidler in this volume) control the seasonal floodwaters in these rivers by constructing a series of dams. Their crops provide the nomads better pasturage, and, in addition, sorghum stubble and various pulses (*mung*, *mot*). By a combination of pasturing and fodder-feeding, the nomads remain in the plains through the winter months and return to the hills only after lambing time, in February or March. (The excessive summer heat of the plains does not favor the highland variety of sheep, goats and camels which the Brahui raise, and dependable water and pasturage is only found in association with areas of cultivation during the winter months.)

Thus, both ecologic zones are characterized by limited pasturage, both seasonal and yearly, and from locality to locality.

And while the nomadic Brahui raise sheep, some goats, and camels, the limiting factor in nomad economy is sheep. Of the three animals raised, sheep and sheep-products are the most widely used. At the same time, they are the hardest to sustain in this habitat. Goats, raised in much fewer number, are herded in the sheep flock, and are used to supplement the by-products of sheep (mainly to provide hair which is used in the yarn of tents, rugs, and storage bags). Camels are highland variety dromedaries, bred for wool and transport purposes, and are sold in market towns or direct to village agriculturalists who use them for draught purposes. The selective grazing patterns of their animals are well known to the Brahui and it is reported that the food needs of goats and camels (both with high thresholds for bitter taste and an ability to live on greater quantities of crude fiber relative to protein) are more easily satisfied within this habitat, than those of sheep.

An example of the relationships between sheep food needs, grazing patterns, milk production and consequent camp movement (or lack of movement) will illustrate the critical role of sheep in the nomadic economy.

The local migration pattern in the hills is determined by the grazing needs of sheep and their productive capacity at this point in time. As local pastures become depleted, camps are moved every few days in a circle within a radius of 10 miles, remaining close to water. During this period, camps move with the flocks because the sheep are in milk and each day the flock is grazed within a short distance of the camp so that it can return to be milked twice daily. But by June, the local grasses are beginning to dry and the flock is grazed at ever greater distances from the camp. As pasturage and tributaries become dry, the milk yield decreases and the flock returns less frequently to camp for milking. Camps now tend to remain stationary while the flock may remain away as long as 2 or 3 weeks searching for pasturage. Now the men of the camp are free to work as reapers in the wheat fields of village friends and wheat begins to replace milk as the staple. Thus, the seasonal scarcity of fresh pasturage and water make sheep-raising a precarious occupation within this habitat, and places severe limits on the number of animals that can be supported here.

But there are not only limitations to the entire animal population that can be supported here, there are limitations placed on the number of animals that can be placed in one grazing unit. It is these kinds of constraints which is the focus of this paper for, as we shall suggest, they have important implications for the formation of camps.

The word in Brahui which we translate as camp is *khalk*. But *khalk* means more than a physical entity, or group of tents. It denotes a group of cooperating households, usually in one location, who have voluntarily placed their animals in one herding unit or flock, under the care of a resident shepherd. The flock itself can be referred to separately by the term *kūr* (sheep flock), while the group of tents comprising an encampment is referred to by the term *alum*. Thus one may ask, "*alum-na arā ē*"? Where is your encampment? or "*kana salaam ēte alum-na*," Pay my respects to your camp mates.

The *khalk* comes into being through a contractual agreement (made with the camp leader in the presence of witnesses) stating that the individual joining the camp will place his animals in the flock and will not remove them for a period of a year, completing one migration cycle. When the flock must be divided into smaller grazing groups (in response to the carrying capacities of local areas) an additional shepherd will be hired on a monthly basis until such time as the flock can be recombined. However, at the end of the migration cycle, a man may, and often does move to another camp.

Each tent-household has its own hearth and prepares its own meals; each economically independent of the others. The fact that each tent-household is an independent unit of production and consumption raises the question why camps exist at all. In former times, when competition for grazing lands and looting were common, households may have joined large camps for mutual protection. Today, however, with the local government regulating tribal conflict, the need for protection does not seem to be a factor. It is apparent, however, that the joining together of independent tent-households serves important economic functions. First of all, a labor force is created which permits essential activities other than herding, milking, etc., to be performed. For example, the use of one resident shepherd, who can control up to 500 sheep, allows tent-heads and their adult sons the freedom to perform harvest labor in local hill villages in return for wheat, to drive stock to market for sale, and to engage in the elaborate hospitality system which serves to transmit information about the availability of pastures and the location of other camps and flocks.

Secondly, the number of animals per Brahui household varies greatly, both seasonally and over the long range. Rarely will an individual have holdings of five hundred or more animals, for, as we shall soon see, he is an unattractive camp partner and may be forced to rely only on his own family as working personnel. In any one camp, the range of household holdings may vary from very few animals to 70 or 80 or more sheep. (Apparently the ready access to wheat and cash through the sale of sheep and camels does not require a fixed minimum number of sheep per household unit, to keep it viable.) But the animal holdings of most households are too small to create, by themselves, the most efficient and manageable flocks. Thus the number of sheep per tent-household is critical in bringing the camp into being. We shall argue, below, that the camp is the group type which creates the most expedient and manageable grazing unit, an adaptive response to the technological requirements of sheep-raising within this particular habitat.

The principles of camp organization are of three main kinds: (1) patrilineality, whereby descent is demonstrated through males to the founding ancestor of a named lineage, (2) affinal and uterine ties, which, because of the high incidence of lineage endogamy are at the same time agnatic ties, and (3) the number of animals per tent-household, which, as we shall soon see, is a factor in setting upper and lower limits to the number of households per camp. We now consider these 3 principles in turn.

In the days of the Confederacy, grazing territories were held by tribal sections having been assigned by the *sardār* or chief, and were further divided among the component lineages. By virtue of membership in an agnatic lineage, a man had rights to graze his animals in specific areas, thereby having access to a camp community composed of his agnates. Today, however, the situation is quite changed since Confederacy organization, which guaranteed stable access to land, is no longer operative. At the present time, all grazing territories are theoretically accessible to any nomadic section of any tribe, but, in fact, sections generally keep to areas which they traditionally grazed. Informants generally agreed that anyone can graze any area providing they keep a respectable distance from other grazing flocks, and from villages and cultivated tracts. Quite often, however, due to the decrease in available pastures, the lineage segments of what were formerly different tribes will camp next to each other during part of the year.

From our analysis of the composition of camps, it is clear that camps are not homologous with lineage segments nor are they stable in membership: rather, they are voluntary units made up of agnates usually from the same section, and subject to fluctuation in membership from year to year. And in some few cases individuals had joined camps where no agnatic relationship could be demonstrated, across what were formerly separate tribes, that is, distinct political entities. Thus, camps are not stable communities composed of the closest agnates. There are even cases of brothers who live in separate camps. It would appear then, that agnation provides a formal basis of organization (derived probably from traditional allocation of grazing rights) upon which other principles are operative.

In addition to agnatic links between tents, it is quite clear from an analysis of camp marriages that tents are also related affinally, through the practice of endogamy. Indeed, the spatial relationship of tents only becomes intelligible when affinal links between tents are superimposed on agnatic ones. Tents which are adjacent to one another appear to be brought together by virtue of the dual role which women of the tents occupy. Since the animal holdings of all the tents in one camp are in one grazing unit, it is women's cooperative work (especially milking) which brings individual tents together. A woman who is wife in one tent and sister to an adjacent one can work most effectively in carrying out her obligations to both.

We see, then, that affinal relations may be viewed as weaving a fabric of ties between tent households within the agnatic group. The camp, in fact, is a group of affinally related agnates. And the informal leader is often the individual with the greatest number of affines in the camp. As the focal point of affinal relations, he can maintain political control, albeit weak, over the camp community. He cannot, however, make decisions for the camp since the decisions of flock management and migration affect every member of the camp. Thus, he is seen as mobilizing a consensus of opinion among tent-heads by securing allegiances through affinal relations. This has been pointed out by Fredrik Barth (1961) for the Basseri and by Nina Swidler (1969) for the Brahui.

Given only the principles of agnation and endogamy, we would expect to find camp communities stable from year to year. Instead, as reported earlier, we find that tent-households change camp membership over time. It is clear from the case material that tent-households move to different camp communities through various affinal links created by the marriages of tent members. A man may join with sister's husband one year, and with wife's father or wife's brother the next, where the changing constellations of affines create unstable camp communities. Clearly, the principles of agnation and affinality cannot explain changes in camp personnel, nor can they explain the groupings of particular affines into camps. The key to camp organization is in the formation of flocks, for the Brahui attempt to create flocks of optimal size, relative to grazing efficiency. In spring, when camps return to the highlands, the number of sheep held by a household determines its range of camp choices.

In the highland areas, each flock is rarely permitted to exceed five hundred animals, for it is reported that this is the maximum number which can be efficiently grazed in one unit by a shepherd and a dog. Each flock, as noted before, comprises the animal holdings of the tents which have joined together in a contractual agreement with a resident shepherd for a period of one year, completing one migration cycle. The shepherd is usually a resident member of the camp who is trying to build his flock. In spring, when the flocks and camps have reached the highlands, each tent-head has the choice of remaining a camp member or withdrawing his animals from the flock to join another camp. The regroupings, or shifts in camp membership serve to combine tent holdings in order to create a flock which, in numbers, comes as close to five hundred animals as possible. When flock size begins to approach this number, the camp will no longer accept additional members. When natural increases bring the camps' holdings substantially above five hundred animals, a group of tents will splinter off and form their own *khalk*, or individuals will look among their affinals for a camp where additional members are being sought.

But in addition to an upper limit to flock size, the Brahui also recognize a minimum size flock of approximately 250, and recruitment to camps is geared to keep the flock above this number. Our Brahui informants report that when a sheep flock falls below 250 animals, it becomes more difficult to herd and the animals fare less well than they do in larger flocks. They express it in terms of a "wasting away" effect which seems to occur in small flocks. When I queried Fredrik Barth about this for the Basseri, he reported that they too report "sheep are not happy in too small groups; they spread and wander and join larger herds; they will not move predictably, in a body." While no Brahui nomad to my knowledge could explain the phenomenon, there is some evidence from experimental data on free-ranging sheep flocks indicating a relationship between flock size and ingestive behavior. In short, it was found that ingestive behavior varies directly with flock size (Tribe, 1950: 74), supporting the Brahui observation and explaining their desire to keep flocks from getting too small.

An additional factor in keeping the flock as large as possible is the competition for shepherds. The shepherd among the Brahui is a professional, an adult resident male who enters into a contractual agreement with the members of the camp for a period of one year. He is sometimes away from the camp for weeks at a time in search of pasturage, especially in the highlands in early summer, when pastures are becoming depleted and the sheep are no longer in milk. In a habitat of seasonal, yearly and local variability in pastures, the knowledge and skill of shepherds is prerequisite to successful herding. Therefore, each camp competes to attract shepherds with reputations for reliability and knowledge in grazing, and the shepherd will naturally choose the camp with the largest flock up to five hundred, for his remuneration is based on the number of animals in his charge. In contrast to the Basseri (Barth, 1961: 16), where the minimum animal holdings per tent-household are reported to be much larger than among the Brahui (60 per elementary family), and shepherds are often adolescent boys of the household, the Brahui shepherd is a skilled tent-head who is responsible for the animals of many tents.

Thus, among the Brahui the population of flocks (as distinct from the total population of sheep in a given area) is determined by a recognition of optimal numbers per flock, relative to grazing efficiency. Flocks are consciously created by the Brahui to fall within the proposed range, thus camps may be seen as taking shape around the flock.

We began by saying that the *khalk* comprises that group of households whose sheep form one flock. While the flock may be grazed in smaller units for short periods of time, in response to local grazing conditions and the availability of water, the *khalk* remains a cooperative unit throughout the year. The Brahui think of this camp community as a group of cooperating households, bound to each other through agnation and marriage, who have combined their animal holdings in order to create the most productive and manageable herding unit. When the camp is also viewed as a manifestation of flock formation, the yearly variation in numbers of tents per camp and the specific camp choices available to individual households become intelligible.

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The Herd Management of Lapp Reindeer Pastoralists

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THIS PAPER is concerned with the notion of *herd management* in the analysis of nomadic pastoral societies. By this, one means the activities a herd owner carries out with regard to his own family herd and other owners and their herds. Herd management may be conceptualized as embodying these two general principles of interdependence:

1. Between herd, personnel and pasture – as the principal factors of production;
2. Between herding and husbandry – as the principal tasks and social roles of the owners of animals.[1]

The assumption inherent here of the developmental primacy of ecologic relationships over others, is demonstrated in the particular analysis of herd management principles among some Lappish reindeer pastoralists.

Kautokeino Reindeer Pastoralism

Kautokeino is one of the counties in the northermost Norwegian province of Finnmark where the overwhelming majority of inhabitants are Lappish speakers (North Lapp), and a considerable percentage are reindeer breeders.[2] The total area utilized by this group of pastoralists is probably over 20,000 square kilometres. The lengths of their biannual migrations vary from 100 to 200 kilometres, and most groups spend a few weeks each year on migration. (The movement is like the Nuer pattern in contrast to the Basseri; cf. Evans-Pritchard, 1940; Barth, 1961.) The herds are moved away from the winter pastures in the interior at Easter time; the summer pastures along the coast are usually vacated in August or September. The movements of different herds are not synchronized by the (non-Lapp) government administration. The migrations are not undertaken in order to escape or reduce the climatic or ecologic differences of the seasons. This is not possible in the sub-arctic. Instead, the Lapp pastoralist devises a schedule of movement so that his animals draw most advantage from the markedly different conditions of each season. (Again, like the Nuer patterns rather than the Basseri.)

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[1] These principles were affirmed comparatively in the discussions at the Wenner-Gren (Burg Wartenstein) symposium no. 24 on *Pastoral Nomadism*, July, 1964, where an earlier draft of this paper was presented. The proceedings of the symposium have not been published. I am particularly grateful to Harald Eidheim for his cogent criticisms in the preparation of that first draft.

[2] Material for this paper was collected in 1961 and 1962 while a Fellow of the Norwegian Social Science Research Council.

In 1958, before calving-time, there were nearly 45,000 reindeer registered within the county, but this is probably an underestimate by as much as 20 %. The ownership of all but 12 % of these animals – belonging to sedentaries – was distributed between 169 households comprising 801 persons. However, the distribution of animals among households is uneven, and the breakdown of the figures in relation to phases of the developmental cycle of households has still to be done.

The reindeer breeders, in 1959, officially constituted 42 % of the taxpayers and possessed 64 % of the total taxable private capital in the county – though this last figure is also certainly an underestimate. Their principal capital item is, of course, the reindeer. These are privately owned but they are often herded collectively, so that a herd has a variable number of separate owners. Ownership is designated by "words" (Lp. *sadjek*) or notches cut in the ears of each animal. Every individual has a registered combination of "words"; this is his ear-mark, and it is usually given in early childhood. Thus a family herd, consisting of the animals of a married couple and their unmarried children, will include a number of ear-marks. While a family herd combines frequently with others for herding, it remains the only corporate unit of ownership; it is usually not until they marry that children excercise rights of ownership over the animals bearing their marks. The pastures over which the owners graze their animals belong to the crown; the reindeer breeders enjoy usufruct.

Many of the problems of the reindeer pastoralist are on account of the wildness of the animal (*Rangifer tarandus*). It is strong and can out-distance a dog on most surface conditions. It is also a shy animal; nevertheless, castrated animals are trained to pull sleds and reindeer cows are sometimes milked. Herdsmen use dogs, lassoes, bells and corrals, but their control of the herds is based primarily on their knowledge of grazing patterns at different seasons and in particular topographic and weather conditions. The diet of the reindeer is at all times limited to a few plant species; however, there are significant seasonal differences of choice. While there is snow-cover (November–May), reindeer ordinarily exist on lichens, principally *Cladonia rangiferina*, which they reach by digging through the snow with their forefeet; the animals do not normally stray far in their pasturing at this time of year. As soon as the spring thaw begins, reindeer search for a few species of soft and juicy grasses; they also prefer a selective grass diet throughout the summer; they are most interested in mushrooms and toadstools in the autumn. Now at these times of year – especially in the autumn – reindeer roam widely in their grazing, they may be difficult to control and will scatter if left unattended for a few hours.

Herd, Personnel and Pasture

I venture this general proposition concerning nomadic pastoralism. A prerequisite of successful herd management is the possession of three variables in commensurate proportions: herd, personnel and pasture.[1] A large herd is of no avail if there is insufficient personnel for its management, or inadequate pasture; large and excellent pastures will be lost by the man who has but a small herd, to another who has a large herd; men who would otherwise wish to remain as partners will have to separate if either the herd is inadequate for their needs or the pasture insufficient for the herd. Each of these statements are subject to ethnographic qualification. In particular, they assume relations of competition to exist among pastoralists, and, no account is taken of such independent variables as external political regulation of pastoral relations.[2]

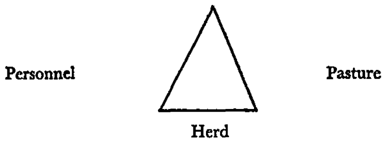

Fig. 1

However, on this basis the ideal herd management may be depicted as the equilateral triangle of Fig. 1. Whether or not this is attained by a particular group of pastoralists, it is useful in analysis, in that, by referring to it while studying actual conditions, one is the better able to grasp the kind of operations pastoralists hope to make, or must make, if they are to continue as pastoralists.

To turn now to the instance of Lapp reindeer pastoralism in Kautokeino. The first definitive element of reindeer pastoralism is the always changing herd-pasture relationship. There are the major seasonal changes (winter, spring, summer and autumn), which are predictable and require quick adaptive responses from the herd owners. The herd-pasture relationship is also open to constant change because of the relations of competition between the reindeer owners: few are satisfied with all their seasonal pastures, and most of them hope to improve their situation.

The implications of this are no less definitive of reindeer herd management. The pasture of a herd will be frequently changed, in respect of both quality and size; at certain times, failure to do so would be catastrophic; e.g., should an ice-layer in the winter form between the snow surface and the lichen. The size of herds will also be varied several times in the course of the year because the quality of a pasture is affected by the number of deer on it and this will vary in a competitive situation. Further, as the sizes of herding units are in rough correspondence to those of herds, there is a concomitant shuffling and regrouping of reindeer owners as herding partners. In the summer of 1960, for example, the Kautokeino herding units numbered 33, in the winter – always a season of smaller herds and herding units – they were regrouped into 50 units; the numbers changed again for spring and autumn. This is a matter of particular significance as the ownership of reindeer, or rather the maximization of their ownership, is affected by the quality of the work partnerships of the owners.

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[1] Access to *water* as well as pasture, must probably be included as a prerequisite of herd management outside the northern regions.

[2] This is an interesting variable of reindeer herd management in Norway, Sweden and Finland (cf. Pehrson, 1957; Pelto, 1962; Whitaker, 1955). I hope to deal with it in a separate paper; cf. Paine (1964) for one aspect of the variable.

Herding and Husbandry

In analysis, the herd management of a pastoral people should be presented with due regard to the relationship between herding and husbandry. We suppose this is to be found in all aspects of all herd management; it may be said to express the connections between two of the rudimentary ecologic and economic relationships of pastoralism: herd/pasture and herd/consumer. The pastoralist mediates in each of these two relationships: as herdsman and husbander, respectively.

Herding is concerned with the herd/pasture relationship as directed to the welfare of the animals, and ideally, to the exclusion of the comfort of the herders themselves. Husbandry, on the other hand, is concerned with the herd as the harvestable resource of its owners. While the tasks of herding, then, are those of the control and nurturance of animals in the terrain; husbandry may be conceptualized as the efforts of the owners in connection with the growth of capital and the formation of profit. The problems of herding are those of economy of labour and they may usually be solved by owners in conjunction with each other; those of husbandry concern the allocation of capital and here each family herd is usually wholly responsible unto itself.

The probability that herding and husbandry have different organizational axes within a pastoral society can have dysfunctional implications since it is upon the integration of herding and husbandry efforts that a pastoral economy ultimately depends.

Among the pastoralists of Kautokeino,[1] a herdsman should be able to handle a reindeer herd in different kinds of terrain, at night as well as by day and in all kinds of weather. This means being able to "read" the terrain and the weather so that he is able to anticipate the different responses of animals of the various sex and age classes, and be able to deduce the probable whereabouts of sections of the herd that are temporarily missing. Knowledge of winds and different snow conditions are particularly crucial. The able herdsman is also able to recognize the ear-marks, the tones of various reindeer bells, and the natural characteristics of animals in his own and others' herds; he is able to remember where and when he saw particular animals or smaller and temporarily unherded flocks.

Many of the jobs of the Lapp herdsman are menial, but herding is not work of low esteem; though ability in herding is not enough to ensure attainment of wealth, most wealthy owners have been (and continue to be) able and energetic herdsmen. Withdrawal from herding duties is very likely to lead to a steady elimination of wealth (Paine, 1970), and for this reason even owners who employ hired labour usually still take some share of the duties of herding. However, it is the younger and unmarried men, and women, who are without domestic responsibilities, who usually have the heavier herding duties. This is a striking aspect of the allocation of work while on migration; on the spring migration, for example, the most valuable section of the herd, the pregnant cows and subsequently their new-born calves, may be herded and moved by young men, who are no more than apprentices in the herding skills, while the married men are with the baggage and family caravans that move with the bull herd.

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[1] Some passages in what follows appeared in a preliminary statement (Paine, 1964 a).

Herdsmen may work alone for days, but more often they work in partnership. At certain times of the year herdsmen of separate units must also work together – to separate their herds that have become mixed, to retrieve animals that have wandered into a distant area. The difficulties of herding, the frequency with which animals manage to stray from a herd, and the seasonal shuffling of partners, mean that each herdsman is presented with opportunities to render his fellows favours or disfavours. A good herdsman, then, is not simply conscientious and energetic, and perhaps talented at the work; he is also a reasonable man to work with; if he is not, then it will be said that he "spoils" whatever herding talents he has. Herding demands qualities of both self-sufficiency and interdependence. All adult males are expected to herd (and a number of women also herd) and capable herding bestows general esteem on a person.

As a husbander, the reindeer pastoralist – or any other pastoralist – is interested in his herd as breeding stock. The reindeer herd, in this view of it, is a complex aggregation of assets. It is not merely a question of so-many 100 head of reindeer, nor simply of so-many male animals and so-many female. Numbers within each sex should be distributed in different proportions between several age-classes. The main tasks of husbandry include the marking of all calves, the slaughter of some of them in their first summer (for their skins, males being taken wherever possible), the castration of 2 or 3 year old males and their subsequent slaughter for meat or training for driving. The husbander will also eliminate those cows that are of low fecundity and those that do not nurture their calves satisfactorily and even those that are inclined to stray, with their calves, from the herd; and all females that have reached their tenth year should be slaughtered.

These decisions of husbandry may be summarized as alternative allocations of reindeer capital:

(a) Minimal necessary allocation of male animals as draft animals: castration.

(b) Selective allocation of animals to the realization of cultural values, in particular the provision of outer clothing where premium is placed upon colour and other qualities of the skins: slaughter (both males and females).

And (c), allocation of animals to realization of liquid capital, i.e. money: retention of maximum number of females as breeding animals and also of a select number of stud bulls; marketing of male animals.

The provision of the pastoral household itself with meat, marrow, fat, blood, bone, sinew, and other reindeer products is made under (b) and (c). The replenishment and growth of the stock takes place under (c).[1]

Intensive and Extensive Forms

Scandinavian ethnographers of Lapp reindeer pastoralism[2] frequently contrast "intensive" (or traditional) with "extensive" (or modern) herd management. The distinction is an important one, but only when used in conjunction with that other between herding and husbandry as integral processes of herd management. In the course of a year, the same animals may be herded intensively *and* extensively, and different tasks of intensive *and* extensive husbandry performed. Further, at a particular time of year one of these processes may be on an extensive and the other on an intensive basis. Only when both are carried out in an intensive or extensive way, can we speak of intensive, or extensive, management.

The following sets of distinctions are, therefore, necessary. *Intensive herding* indicates strict control of the herd. It follows that the greater the extent to which herders control the movements of the herd, the more the responsibility for the attainment of optimal conditions for its welfare lies with them. *Extensive herding* indicates that the animals for long periods of the year are not herded, or herded very little. The characteristic operation here is the periodic large-scale round-up of animals. We will see that it is dangerous to assume that extensive herding necessarily means (as is generally supposed in the literature) that owners have inadequate knowledge of their herds. *Intensive husbandry* indicates diversity in utilization of the reindeer and its products: use of draught animals, milking, reindeer foods and clothing; and careful selection of animals for slaughter. *Extensive husbandry* indicates that the primary allocation of herd capital is to the sale of animals "on the hoof," i.e. alive.

In some respects the distinction between extensive and intensive husbandry is one of degree only: intensive is one of many commitments and extensive is one where there is a curtailment of commitments or an inability to meet them. The latter is mainly due to the contingencies of extensive herding (e.g. the cessation of milking), and on this account husbanders make new rationalizations regarding the utility of the various tasks of intensive husbandry. For example, extensive husbandry in the spring may be justified on the ground that reindeer cows are best left undisturbed before and after calving, and that adequate information about which cows fail to calve and which lose their calves can be gained from observation of the herd in the autumn. In general, extensive herding alternates with intensive periods, and during these there may be an intensification or resumption of some of the tasks of husbandry, e.g. castration of bulls and milking of cows.

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[1] The dynamics of reindeer herd population and growth cannot be dealt with further here. Reindeer cows usually calve annually after their second year. Their reproductive life would continue beyond their tenth year, the reason that they are slaughtered at that age is because the deterioration of their teeth may make it difficult for them to feed themselves properly and therefore there is a risk that their calves would be undernourished.

[2] See Hultblad (1936); Ruong (1956); Vorren and Manker (1962).

It is in respect of how a husbander disposes of his animals that there is a difference in kind – and not of degree only – between intensive and extensive husbandry. An owner may himself slaughter a few animals periodically throughout the year (except the summer when the heat and flies prevent the catcheing of meat) and sell only the better-priced joints while retaining the low-priced joints and all the other reindeer products for his family.[1] This is the procedure we identify with intensive husbandry; in this way a relatively few animals may meet immediate needs of both cash and meat, as well as supplying other materials essential to the domestic economy. Alternatively, an owner may choose to sell relatively large numbers of animals twice or three times a year, and sell them alive, which means the forfeiture of the right to any of the meat and all of the other natural products; this procedure is exclusive to extensive husbandry.

The distinctions that have now been made properly enable one to consider the size of herd and the kind of reindeer management as related questions. The size of herd and the type of herding, in Kautokeino, may both be related to environmental conditions. Snow-cover places a limit on the number of animals that can safely be pastured as one herd[2]; but where summer pasture is bountiful there is no corresponding ecologic restriction to the size of the herd. Further, summer pastures are usually on peninsulas and islands because the winter pastures of the interior must be rested, and mosquitoes and other summer insects bother the herds least in coastal districts, and out there the chances of herds from different pastures becoming mixed are minimal. In the winter, on the other hand, there are very few effective natural boundaries between pastures.

However, the size of herd and type of herding can also be more or less independent of the natural conditions, and related, instead, to the type of husbandry that is desired. For example, spring is the season during which many owners wish to take stock of their animals, for a number of husbandry purposes. This means intensive herding of herds with as few owners as possible – for two principal reasons. Firstly, successful and established owners wish, at this season, to purview their own animals as a herd, without the inclusion of animals of others. Secondly, the husbandry tasks of this season require close and sensitive control of the herd and therefore a high coordination of the efforts of the herders; this is the more difficult to obtain the more numerous the personnel. Thus herding partners of other seasons will separate before beginning a season of intensive herding because "...we are too many."

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[1] The low-priced joints include the back, ribs, head, throat and heart; women prepare sausages from the intestines, clothing from the skins, sewing material from the sinews, and food for the dogs from the blood.

[2] There are a number of factors, the most important one is that reindeer may so trample the snow that it becomes too tightly packed for the animals to dig through it (with their forelegs) and reach the lichens on which they feed.

Yet there is a contemporary trend towards extensive herding (and larger herds) independent of both ecologic conditions and prerequisites of husbandry. The new variable here is work commitment. There is always a work commitment in intensive herding, but intensification means periods of high and of low work commitment or even of none. This kind of routine is now widely regarded as more congenial.

Thus, the winter is no longer everywhere a season of strict herding. Day and night watch used to be kept on the herds in an effort to protect them from wolves, but since the last war this predator has been radically reduced; and in the winter one may now find small units *without* intensive herding. Now, winter herds more often become mixed. Spring is the season in which reindeer owners have exercised most caution when making any changes (for reasons discussed above); nevertheless, some owners now find it defensible – for example out on the islands – to extensify their herding even at this season. This trend has by now become the characteristic of herd management, with but few exceptions, on summer and autumn pastures. Fences (mostly financed by the state) have been built across some of the peninsulas to provide common and enclosed summer pastures for many family herds. At the end of the summer, these large herds will be let through the fences – all at roughly the same time – to pour onto the autumn pastures between the coast and the interior. Here there are few effective natural boundaries and fewer fences, and there is usually no snow-cover at this season. In recent years, large corrals have been built (again, mostly by the state) through each of which it is possible to pass – and separate into herds – two thousand reindeer inside a day; only by this means is it now possible for owners to re-group in smaller units. Even so, most owners will not have complete herds before January–February.

Two other related questions, that are of recurring significance in any pastoralism, may be explicated in this context. These are the availability of husbandry knowledge, and the availability to individual pastoralists of choices in herd management. It is interesting to consider both of them in relation to this contemporary extensification of herding among the Kautokeino pastoralists.

Successful allocation of his herd capital is largely governed by the knowledge a reindeer owner has of his herd. Independent of his choice of husbandry, it remains true that he knows he should sell animals of certain sex and age classes, and others that have certain physical or behavioral defects. Moreover, it is only a wealthy owner who can really afford to sell other animals than these. The point of interest here is the relationship between knowledge of a herd and the control exercised over it in the course of an annual cycle. It is often very difficult to possess the requisite knowledge in conjunction with extensive herding. However, the value of the knowledge varies according to season of the year: at times it is of little practical value and at others it is indispensable; furthermore, at certain seasons, it is relatively difficult to regain lost knowledge.

This variability permits owners in some parts of the Kautokeino pastoral area to manipulate their schedule of herd management so that they are able to select properly the optimal number of animals, market them, *and* practise extensive herding. In sum, these owners acquire husbandry knowledge at the strategic times. These times, for the market production of extensive husbandry, are autumn, in particular, and early winter. But in other conditions within the Kautokeino area, some owners who would wish to adopt the new extensive husbandry along with extensive herding are obliged to follow, as best as they can, the traditional production pattern of intensive husbandry. These people include the smaller owners. In conditions where extensive herding deprives the owner of his requisite husbandry knowledge, the small owner (less than 400 animals) finds that it is only by continuing with the production aspects of intensive husbandry that he can avoid selling his cows and can actually select the animals he has in mind.

Examples are appropriate here. In many parts of the Kautokeino pastoral area, herd knowledge is high in the spring, because herding and husbandry are intensive during calving-time, but this knowledge is lost during the summer months of extensive herding and husbandry, and it is not regained during the autumn on account of the conditions of turmoil that were mentioned (p. 83 above). The husbandry problems of a small owner in this situation may defy reasonable solution. Let us suppose that he wishes to sell a dozen animals in the autumn, mainly in order to raise cash with which to pay household debts from earlier in the year. These animals should be 3-year old males and they should have been castrated earlier in the season, if he is to make the most profitable sale. The owner believes that he owns over a dozen such animals, however, he can only find six in the autumn corrals. If he is to carry through his intention, he is now faced with the prospect of taking uncastrated bulls and – what is far worse – a cow or two. He may find a cow that is without a calf; yet he could not positively know, in the autumn turmoil around the corrals, whether the calf has died or simply become temporarily separated from its mother. In fact, he probably does not sell a dozen animals; nor does he sell "on the hoof" the few animals he eventually selects, but slaughters them himself and retains enough meat to last his family until his herd is collected together properly, sometime in the winter.

In contrast, in another part of the Kautokeino pastoral area, the owners have no herd knowledge during the spring because the natural conditions permit extensive herding and husbandry at that season. However, they manage to gain knowledge of their herds from August onwards and to retain it through the autumn migration, while herding extensively. This is because the area is conveniently bounded by coastline, ravine and mountain on three of its sides, and the animals are passed twice through fences, once in the late summer and again in the late autumn, on their way to the winter pastures in the interior. In this manner the herds are kept under sufficient control and surveillance that the owners are able to market their animals extensively in the autumn. The different circumstances of these examples are reflected clearly in the budgetary data from herds in the two areas, collected by the present writer.

However, there are those owners – including some with large herds (over 1000 animals) – who continue with the limited and selective slaughter of intensive husbandry out of choice, although they may have been glad to make the change to extensive herding. They wish to postpone the reduction of their herds – in sheer numbers – for as long as possible. This husbandry is economic inasmuch as it meets a wide range of immediate needs as they arise, and it may well lend to a temporary increase in herd size (which is a traditional value that many Kautokeino pastoralists still try to maximize over and above others). Yet in the long run the procedure is incompatible with an expansive economy, or even a healthy herd. To these ends, the owner must at some point convert reindeer wealth into other forms (Fig. 2). Otherwise, as his herd increases so will needs for pasture and personnel, and unless the herds of several owners in the area suffer an appreciable decline, it is unlikely that he will be able to meet the needs satisfactorily.[1]

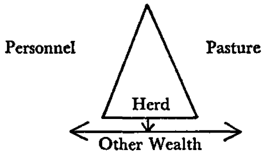

Fig. 2

Perhaps the most significant aspect of this contemporary situation in Lapp reindeer management is the accumulative removal of situations of choice. As soon as some owners choose to extensify their herding, the presence of their unherded or only loosely herded animals will embarrass the stricter herding routines of other owners in the area. There are few effective sanctions by which owners can protect their intensive herding. Similarly, *within* units committed to extensive herding, a person who advocates a minority policy can be left holding it alone – not only without herding partners but without a herd too; this is because there are more partners than are necessary for any technical operation. This is *not* so with intensive herding as here, the small size of the unit usually means that the co-operation of each of its members is essential for the execution of a herding or migratory schedule or strategy. Thus, by choosing to disagree or refusing to help, a person is able, in intensive herding, to exercise a sanction.[2]

There is another point in this connection. The traditional need for unanimity in herding decisions has been a factor contributing to the shuffling of partners, for by this means a person may be able to avoid having to make repeated compromises in his viewpoint in favour of unanimity. However, this freedom of combination is itself reduced with the extensification of herding (fewer units), and thus less regard is paid to the principle of unanimity (too many people).

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[1] Otherwise the balance is restored by Malthusian-like processes: the animals of a herd with insufficient pasture and/or herdsmen are lost through disease and/or malnutrition, to wolves and other natural predators, through straying, and through theft. Even prior to the last world war, all of these processes were much more in evidence than they are now.

[2] Cf. Middle East pastoralism. It seems that a Basseri (Barth, 1961) never has this sanction as there are always more persons available than necessary for any job.

Concluding remarks

This paper has attended to a neglected, although obvious, approach in the analysis of nomadic pastoral societies, and in conclusion there are several aspects of it that may well be emphasized.

It is appropriate to view nomadic pastoralism as a kind of economic enterprise. Now efficient management of an economic enterprise is widely conceived as having two developmental phases: an economic plan is made first, and then a work organization devised to give the greatest chance of its realization. Of course, this is a simplistic view, and anthropologists have drawn attention to the presence of social and cultural constraints (with the notion of "social costs" of an enterprise) that affect – in just about all instances – both the economic plan and the work organization. Granted as much, there are still particular difficulties that all nomadic pastoralists are likely to experience in the organization of their enterprise, for here a number of the intervening variables between economic plan and work organization are ecologic, and they may well be both unpredictable and uncontrollable.

The difficulties are probably especially great in reindeer pastoralism. We have seen that the animals are, at best, only semi-domesticated, herding decisions affecting the standard of husbandry must often be improvised and may even lack effective sanctions, pastures are of variable quality, usufruct rights are not exclusive, knowledge of the whereabouts and the condition of herds is not always available, and herding partnerships are subject to changes.

In nomadic pastoralism, one may note, the profit of a team member does not automatically diminish in direct proportion to the number of persons in the team; as it does, for example, in many forms of fishing where there is a distribution of shares. But for optimal efficiency in nomadic pastoralism, there are definite ceilings regarding both the number of persons in a team and the herd: pasture ratio. These vary seasonally. Further, the existence of competitive relations among the pastoralists themselves is likely to mean that all three variables – herd, personnel, and pasture – are brought into a general relationship of interdependence. The values of these variables and some of the specific forms of their interrelation have been spelled out in this paper in connection with the reindeer pastoralism of a northern group of Lapps.

The intensive-extensive distinction that has been discussed here is probably one of general comparative value; however, its utility depends upon the separation in analysis of the herding and husbandry aspects of management. Only then, and by noting the permutations in their combination in time and place, is one able to begin to show how and why choices are taken by pastoralists in their herd management, and to explain successes and failures.

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Variation in Economic Organization: A Comparison of the Pastoral Yomut and the Basseri*

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THIS PAPER is a comparison of certain aspects of the economic organization of two pastoral groups in Iran. The forms of economic organization characteristic of these two groups differ in only a limited number of ways, and this paper is concerned with explaining these differences by demonstrating that they represent adaptations to different political and demographic circumstances.

The data presented on the Yomut were gathered in northern Iran from late 1965 to 1967; that on the Basseri is drawn from material published by Fredrik Barth (1961 and 1965).

The Two Groups Compared

The Yomut are one of several large descent groups that share the ethnic designation Turkmen, and together occupy a contiguous area in the southwestern corner of Soviet Central Asia and adjoining parts of Iran and Afghanistan. All of these groups speak the same language, share basically the same cultural tradition, and maintain a belief in their common origin. The Turkmen language belongs to the southwestern group of Turkic languages which also includes Azerbaijani and modern Turkish.

The Yomut are divided into two large geographic subdivisions, the Khiva Yomut who are situated west of the city of Khiva and the Gurgan Yomut who occupy the portion of Iran known as the Gurgan Plain and immediately adjacent regions in the Soviet Union. There was in the past a considerable and continual population movement between the Khiva and Gurgan Yomut, but it is difficult to say how similar these groups were in terms of the social forms discussed in this paper. It does, however, seem safe to assume that the Yomut in the Soviet Union, both those of the Khiva and Gurgan regions, have at present experienced greater social change than those in Iran. This paper does not attempt to deal with the process of social change on the Soviet side of the border, but rather is limited in scope to the Yomut who are now on Iranian soil. As a matter of convenience these people are referred to throughout this paper simply as the "Yomut" rather than the "Iranian Yomut."

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The Yomut like most of the other large Turkmen groups are divided into two occupational categories, the *chomur* who are predominantly agricultural and the *charwa* who are predominantly pastoral. This paper is concerned for the most part only with the latter group, although brief mention will be made of the Yomut *chomur*. The *charwa*, or pastoral, Yomut are engaged primarily in the herding of sheep and goats and are oriented toward the sale of these animals and their products in urban markets.

The migratory pattern of the *charwa* is very circumscribed consisting of a concentration of camp groups around a permanent water source during the dry season, summer and fall, and a dispersal of camps over the surrounding territory during the wet season, winter and spring. Lambing in the winter and milking in the spring require intensive herd care and, therefore, camp and herd are kept close together during this period. If pasture becomes exhausted in one area, both camp and livestock must be moved to a new area. Such movements are, however, few and usually quite short, most being easily completed in a single day. The situation during the dry season is quite different. Intensive management of herds is not necessary and the animals are placed in the care of shepherds, the younger men of each family, who pasture their animals at a considerable distance from their camp site which usually remains at a single location throughout this season. (A similar pattern has been described for *charwa* among the Teke Turkmen; König, 1962: 46–53.) In addition to sheep and goats, smaller numbers of horses, cows, and camels are herded, with cows being more numerous in less arid areas, and camels more numerous in areas that are level and characterized by salty soils. Donkeys are also kept as beasts of burden. Although primarily dependent on their livestock, most *charwa* families also practice some agriculture. This consists in the case of the Yomut *cahrwa*, of a high-risk cultivation of wheat, barley, and a few mellons, accomplished by exploiting either natural depressions where rainwater tends to collect from a much wider area, or areas in which rainwater is made to collect in a similar fashion by the construction of simple earthern embankments. There are also some *charwa* who own plots of land in regions occupied by *chomur* which they rent to local people, usually on a sharecropping basis. This, however, is a recent development.

The Basseri are Persian-speaking, although they are members of the Khamseh tribal confederacy which includes Arabic and Turkic-speaking groups, and they share broad similarities of culture with other Iranian-speaking groups both nomadic and sedentary. In order not to exaggerate the extent of their cultural differences from the Yomut, it should be borne in mind that the Basseri do share with the Yomut a number of cultural features that are common to all of the Moslem peoples of the Middle East.

The Basseri nomads practice a very different system of migration and land use, making a long migration twice a year between winter grazing areas at low altitudes in the southern portion of Fars province and summer grazing areas in the high mountainous regions some three hundred miles farther north. The tribe as a whole thus exploits a strip of territory, roughly three hundred miles long and fifty miles wide, ranging from elevations of 2,000 to 6,000 feet and exhibiting extensive variation in climatic conditions. At each season the tribe occupies the altitude which at that season provides optimal conditions for their livestock in terms of providing adequate pasture and avoiding extremes of climate. By doing this they are able to maintain a livestock population considerably larger than could be supported by a comparable tribal area with very little variation in elevation. This pattern of land utilization requires frequent migrations, a situation reflected in the fact that the average Basseri camp moves about 120 days out of the year (Barth, 1961: 51). The animals raised are primarily sheep and goats, with horses, donkeys, and camels being present as beasts of burden. Some of the nomads engage in a limited amount of agriculture in the region of summer pasture, although at the time of Barth's field research, 1958, this was described by informants as a recent trend (1961: 9). In addition some of the wealthier nomads own bits of land along the migration route which they rent to sedentary people on sharecropping contracts. Such land owners, however, do not themselves engage in agricultural labor on their land.

Economic Organization

Despite the different patterns of land use characteristic of these two groups, there are a number of similarities in their economic organization. Both groups are primarily engaged in the herding of sheep and goats, and both are oriented toward the sale of animals and animal products in urban markets. Among both groups livestock are owned and managed by individual household heads, but access to pasture and water are gained for each through membership in larger corporate groups. In the case of the Basseri these groups (*oulads*) are named subdivisions of the tribe which the tribesmen themselves conceive of as agnatic descent groups. Most members in fact acquire their membership by virtue of descent, although full membership can also be acquired by the unanimous acceptance of group members (1960: 59). Among the Yomut these groups (*obas*) are conceived of basically as residence groups to which membership can be gained either by agnatic descent from a member, or by the unanimous consent of group members.

In comparing the economic organization of these two groups, attention will be focused primarily on factors affecting the distribution of wealth among households and on ways in which the distribution of wealth, in turn, is related to both the political and demographic situation of each tribe. Since the organization of economic production is primarily a household affair among both groups, considerable attention will be given to domestic organization.

The Domestic Organization of the Yomut

Among the Yomut the developmental cycle of domestic groups is one of nuclear family households hiving off from extended family households. Ordinarily a man leaves his father's hearth and establishes an independent domestic unit when he has children approaching the age at which they are able to function as adult economic producers. Such a newly established household usually consists of a nuclear family which over time develops into a patrilocal family.

There are a number of proscriptive norms affecting the developmental cycle. A man must acquire brides for his sons in the order of their birth using a portion of his livestock for each bridal payment. Bridal payments are quite high consisting ideally of ten camels (five she-camels with their young) for the bride's father or an equivalent amount of wealth in other forms, and one camel or its equivalent for the bride's mother. Most payments are commuted to small stock (sheep and goats), the most abundant form of wealth to be found among the Yomut *charwa*. For purposes of setting bridal payments five ewes with their lambs or five she-goats with their kids are considered the equivalent of one camel. Most families must labor for a number of years in order to put together a bridal payment and many are left temporarily impoverished after acquiring a bride.

The marriage ritual and payment of bridewealth is followed by a period of several years (usually three) during which the bride remains in her father's household and bride and groom are forbidden contact with one another. Marriage in its initial stage is, thus, basically a contractual link between two families without change in the composition of either. Following this initial stage, the bride moves permanently to her father-in-law's household. At this point, marriage entails an increase in the labor resources, both actual and potential, available to the groom's father and a similar loss to the bride's father. The gain in labor available to the groom's father is considerable since a man ordinarily marries at about twenty but does not establish a separate household until he is between thirty-five and forty.

Sons are allowed to establish independent households in the order of their birth, and at the time of establishing independence each is given a patrimony. A man's patrimony ordinarily consists of a yurt with furnishings, beasts of burden for migration, and a herd of sheep and goats as the basic capital from which to make a living. The amount of a man's patrimony is not rigidly defined and ultimately rests at the discretion of his father. Most fathers, however, attempt to give each son an equal patrimony.

The Yomut also practice ultimogeniture. The youngest son of each family is not allowed to establish an independent household during his father's lifetime, but rather is required to continue as a subordinate member of his father's household until his father's death. After his father's demise, he receives the entire residual estate as his patrimony. The Yomut, in addition, practice a form of adoption of sons among close agnates as a means of providing men without male issue with at least one son. Such an adopted son then stands in the same position, in effect, as a youngest son and must remain a part of his adoptive father's household as long as the latter lives.

Although a son becomes independent when he establishes a separate household, nevertheless he usually continues to camp with his father and usually they also cooperate in herding and other economic activities. Thus, the core of most camp groups consists of a cluster of households closely related in the male line. Such clusters consist either of a father and his independent sons or a group of independent brothers whose father is deceased. The majority of camp groups fall in the range of two to ten households with four or five being the most frequently occurring numbers. (It should be noted that although most households have only a single yurt, larger households often have more so that the number of tents in a camp is sometimes larger than the number of independent households.)

Yomut camps continually fluctuate in composition. At each migration, a camp has an opportunity to divide or to merge with another camp group. Such decisions are made on the basis of discussion and agreement among all household heads involved. Occasionally father and son do for one reason or another camp separately for a short period, or more rarely they may choose to reside permanently apart. A group of brothers whose father is long deceased are more likely to camp separately than are a father and his independent sons, and in general the more distant the agnatic tie the greater the frequency of separate residence. Thus, agnates as close as first cousins reside more frequently in separate camps than they do together. Groups of agnatically close households frequently join with non-agnatic kin, or with non-kin to form camp groups.

Cooperation of various forms is extensive among members of the same camp even when they do not herd their animals together. They invariably share labor, beasts of burden, and tools freely when asked. They are in and out of each others tents frequently and behave toward one another in an informal and relaxed manner.

Above the level of the camp, the next larger residence group is the *oba*, a group of twenty-five to one hundred households, which share joint rights to pasture and water in reference to a defined territory. Rights in relation to an *oba's* territory are vested equally in each individual household. The *oba's* grazing territory is not subdivided into subareas over which particular camp groups have a pre-emptive claim, and how the constituent households of an *oba* divide themselves into camps does not affect the equal rights of each household to exploit the *oba's* territory. Each camp group which is formed by mutual consent of its members is free to migrate to any spot within the *oba's* territory so long as it does not crowd previously located camps.

Although conceived of as residence groups, virtually all *obas* are dominated numerically by a single descent group and it is recognized that this group can, and in certain situations probably will, control group decisions. A shift in residence to a new *oba* can be accomplished by obtaining the permission of the current members of the *oba*, and such changes of residence are not infrequent although in such cases households tend to move to other *obas* dominated by their own descent group.

Each household is not only a member of a particular camp and a particular *oba*, but also is the center of a network of close kin many of whom are frequently in different camps and even different *obas*. Visiting between closely related households that reside apart is frequent and cooperation, to the extent that distance permits, is common. There is also a high probability that such closely related households will at some time in the future choose to camp together. The Yomut have a definite tendency to emphasize agnatic ties so that the network of ties actively maintained by frequent visiting and cooperation which surrounds each household usually contains many more agnatically related households than non-agnatically related ones.

There is also a tendency for affinal or uterine ties to coincide with patrilineal ones. Marriage is permitted with all four types of first cousin and with all more distant relatives, and there is a stated preference for marriage with close kin although a man is not conceived of as having a definite right to marry any category of female relative. The preference is reflected in a fairly high frequency of marriage with agnates, and, therefore, particular households are often united through more than one type of kinship link.

Extended economic assistance in times of need between closely related household, those whose heads are closer than first cousins, is quite common. The most visible form of assistance of this sort is the merging of impoverished households, with more prosperous ones, a process that occurs most frequently between father and independent son and between independent brothers. More distant relatives naturally can be relied on only for smaller amounts of assistance. The most conspicuous of such lesser forms of assistance to kinsmen in need is the *zakat*, an annual donation prescribed by Islam of a defined portion of one's capital in livestock and one's agricultural income which must be given to someone who is either impoverished or is engaged full-time in the teaching or study of religion. Such donations among the Yomut are invariably given to kin, usually the closest relative qualified to receive it.

The Distribution of Wealth Among Yomut Households

An examination of the distribution of wealth among households is crucial to an understanding of the demographic and political effects of economic organization. There are two attributes of the distribution of wealth which are especially relevant to the current discussion. The first is the fact that the distribution of wealth is continually changing. The second is the fact that, despite this situation of flux, there is a strong correlation between the distribution of wealth and the distribution of labor resources among domestic units.

The livestock holdings of each individual household change from season to season as well as from year to year. Informants estimate that the postion of fertile females in a herd which can be expected to reproduce in a particular year varies from 60% to 90%. A high death rate among lambs and kids usually reduces the number of yearlings to between 30% and 60% of the number of fertile females in the herd. The sex ratio at birth is approximately 50% males and 50 % females. The most common practice is to keep all of the female young in order to build up the reproductive potential of the herd. This allows an annual increase in the female portion of the herd ranging between 15 % and 30 %. Female animals reach maturity in two years after which they are kept as breeding stock for seven to nine years before being fattened for sale. During this period from reaching maturity to sale, the female stock constitutes the most productive portion of the herd, providing offspring, milk, and wool. The majority of male animals are castrated in the fall of their first year and are sold for meat and hides after reaching maturity. Cash income derives largely from the sale of animals, wool, and carpets manufactured from local wool. Subsistence income takes the form primarily of milk and meat. As mentioned above most households also have some supplementary income from agriculture.

The striking feature of this pastoral economy is the large potential that a herd has for increase. This high potential for growth is, however, accompanied by a high risk. Drought, disease, and severe cold can often cause sudden and dramatic losses. Also wolves and thieves as a rule claim a few animals each year. In addition to such hazards, unusually high living costs and occasionally bridal payments can cause a family to cut into its productive stock. Thus, a man during that portion of his life in which he is a household head normally experiences a number of economic ups and downs. If alternate forms of economic support were not available to families that find themselves temporarily without sufficient livestock for their livelihood, life among the Yomut would be very precarious.

These alternate forms of support are found in employment as shepherds and in the assistance of kin. There are two varieties of shepherding contracts. The most common arrangement is one by which a person hires himself out to a large herd owner who is a *charwa* migrating with his stock. Under this arrangement the hired shepherd migrates with his employer and a part of his compensation consists of being fed and clothed by his employer. In addition to food and clothing, the shepherd is paid in livestock during the winter and spring, and cash during the summer and fall. Compensation in livestock consists of one yearling for every fifteen animals cared for, and compensation in cash at the time of my research was set at 600 *tumans* ($ 80.) for the six months of summer and fall. Shepherding agreements are ordinarily made for six month periods covering either the wet season or the dry season, although often a particular shepherd and herd owner will renew their agreements over a period of several years. An alternate arrangement consists of farming a herd out to a family in another community. A herd placed with a family under this type of an agreement is called an *emanet*. This is most frequently done by wealthy agricultural Yomut who wish to put a part of their wealth in livestock. A person charged with the care of such a herd receives all of the dairy products of the herd, one-tenth of the wool, and one out of every fifteen of the young produced each year. He also consumes any animals that must be slaughtered because they are about to die.

It should be noted that Yomut enter into these shepherding arrangements only with other Yomut. Kurdish nomads from Khurasan and Sangsari shepherds from the area north of Demghan in the Elburz Mountains spend the winter and early spring in the regions occupied by Yomut *charwa*, but there are no shepherding contracts cutting across these groups so that each constitutes in effect a separate labor market. The labor market for shepherds among the Yomut *charwa* at the time of my research was not strongly baised in favor of either the shepherds or their employers.

The primary significance of these shepherding arrangements for the current analysis lies in the opportunity they provide for translating labor into capital. These shepherding contracts make it possible for family heads who lose their livestock in one way or another to regain their position as independent herd owners. It is often possible for a family that has lost most, or even all, of its livestock to build up a herd large enough for economic self-sufficiency in a period of four to five years by entering into shepherding arrangements. Shepherding contracts also provide a means by which families with many sons can build up the surpluses of livestock necessary to acquire brides.

This brings the discussion to the second point concerning the distribution of wealth, the correlation of wealth and labor resources. This correlation derives from the fact that among the Yomut *charwa* it is relatively easy to transform labor into capital. Families with a large number of adult male members are able to give their herds better care so that over a period of years the herds of larger families tend to increase while those of smaller families tend to decline. Households with a large number of male members can also easily afford to hire out some of their members as shepherds providing an additional source of income in cash and livestock. Female labor is also important because of carpet weaving. The return on female labor invested in carpet weaving is quite high by local standards, but both the limited supply of wool and competing demands for female labor limit the production of carpets. Because of these limitations, several closely related households usually pool their resources in wool and female labor for purposes of carpet weaving, splitting the eventual profit according to each household's contribution.

The data relevant to the correlation between wealth and labor resources indicate not only a strong tendency for families with many adult members to be wealthier than families with few adult members, but also a tendency for families with greater labor resources to have more wealth per adult member than families with more limited labor resources. It should, however, be observed that the greater wealth of larger households would represent an advantage even if they did not possess greater wealth per adult member. This is partly a result of the fact that the minimal non-productive capital necessary for migratory life, a yurt with furnishings and beasts of burden, is roughly the same for large and small households. Thus, smaller households find that replacement of these items absorbs a larger portion of their total income. Greater total wealth without greater per capita wealth would also represent an advantage in terms of meeting occasional large expenses such as bridal payments. The fact that larger families do enjoy not only greater total wealth but also greater wealth per adult member indicates the importance of labor resources as a means to wealth.

The Yomut are themselves aware of the economic advantages of a larger household and they express this awareness largely in terms of a preference for sons over daughters. A man, during that portion of his life in which he is an independent household head, finds that the size of the labor pool which he commands depends largely on the number of his sons. This is largely a result of virilocal residence. A man with many sons finds his household grows in labor resources as his sons marry. A man with many daughters and few sons, in contrast, see the labor resources of his household decrease as his daughters marry. It is true that in his later years a man with many sons will see his labor resources decrease as his sons become independent. Nevertheless, the economic contribution of a son to his father in the form of labor is far greater than that of a daughter. The average age at which Yomut girls leave their fathers' households is eighteen; men in contrast usually leave their fathers' households sometime between the ages of thirty-five and forty. However, it is important to note that the Yomut preference for sons is not just a result of economic factors. When queried about these matters Yomut are quick to point out that sons, and also brothers, are one's most important political allies. It is true that more distant agnates can also be called on for assistance of a political nature, but one can always depend on sons and brothers for greater assistance. Nevertheless, for the present analysis the economic advantages of a larger number of sons, and hence a larger pool of labor resources, is the more crucial factor.

In the light of the above observations, certain features of the developmental cycle of domestic groups assume a definite economic significance. The combined effect of the practices of ultimogeniture and adoption is to guarantee each man the labor of at least one son. This guarantee of certain minimal labor resources limits the number of households that experience economic difficulties. It should, however, be emphasized that labor resources are only one factor affecting wealth and that as a result of other factors various households do on occasion find themselves with insufficient capital for their own support. Natural hazards such as drought, severe cold, and livestock disease account for many of these cases. High expenses, especially bridal payments, also account for many of the Yomut households that can be found with insufficient wealth. The evidence indicates that households with fewer than thirty-five animals or an equivalent in livestock and land invariably find it necessary to supplement their income from their capital. Both the shepherding arrangements and the practices of assisting poorer kin described above provide these alternate means of support. The full effect of these various factors on the distribution of wealth among Yomut households and ultimately on the demographic and political circumstances of the Yomut can be brought out most clearly by comparing the Yomut *charwa* with the Basseri.

The Contrast in Economic Organization Between the Yomut Charwa and the Basseri

In his study of the Basseri nomads of southern Iran, Fredrik Barth devoted considerable attention to the influence of certain economic and demographic processes on Basseri social forms. (Barth, 1961, pp. 101–122, and Barth, 1964.) He observed that the Basseri are relatively homogeneous in terms of wealth despite the presence of a number of processes, which tend to create an unequal distribution of wealth among Basseri households. He then accounts for this fact by demonstrating that there is a strong tendency for both the wealthier and the poorer pastoral families to move into the sedentary agricultural population of Fars and, therefore, to be lost to the Basseri nomadic population. This sloughing-off process may be summarized as follows.

The poorer nomads, unable to live on the income from their livestock, become wage laborers in sedentary villages and abandon migration. Abandonment of migration and devotion to wage labor rather than to their dwindling herds leads to a rapid loss of what livestock may have remained when they first turned to wage labor. Wealthier nomads follow a different route to sedentarization. Large herds can only be managed with the help of shepherds, but placing a portion of one's herd in the care of a shepherd leads to lower returns owing to the wages one must pay and to the pilfering propensities of Basseri shepherds. Faced with diminishing returns from their herds, wealthier nomads tend to invest a portion of their wealth in land which is more secure and provides a better return. They, thus, become absentee landlords while migrating with their livestock. The greater security of land and the diminished returns characteristic of large herds lead such nomads to invest any increase in their wealth in land. Thus, if a man's wealth grows, a larger and larger portion of it becomes land, and his growing concern for this portion of his wealth eventually leads him to settle on his land. Barth further observes that of the two processes, that through economic decline is by far the more common.

Thus the Basseri are characterized by a continual sedentarization of a portion of their population and variation in wealth is the primary factor determining which families settle and which remain nomadic. There are a number of factors responsible for variation in wealth. Naturally some families are more efficient in managing their livestock than others and such differences lead to variations in wealth. All Basseri herds, like Yomut herds, are subject to occasional setbacks owing to livestock diseases, accidents, predators and high family expenses which can cause a family to cut into its productive capital. Such setbacks strike different families with varying degrees of severity creating inequalities in wealth. Also, larger families tend to be more productive than smaller ones as is the case among the Yomut. Thus, the factors responsible for variations in wealth among the Basseri are basically the same as those found among the Yomut.

Among the Basseri there are also a number of forces which counteract the tendency toward inequality of wealth. These are pressure on wealthier Basseri men to acquire brides early for their sons, a process which tends to dissipate their surplus wealth. Often wealthy men acquire more than one wife and therefore have more sons, a factor which further counteracts any tendency toward the accumulation of greater wealth. Poor men in contrast acquire brides for their sons later so that demands on the increase of their livestock are more limited. Poor men are also able to limit expenditures in order to limit demands on their herds. Despite the presence of such factors tending to limit variations between families in the size of their herds a continual process of differentiation in wealth does occur, and a certain number of families are always to be found in the Basseri population which are moving away from the statistical norm in terms of their wealth. Some of these families are accumulating unusually large herds, and others are moving in the direction of impoverishment. Ultimately it is only a process of sedentarization of the wealtheir and poorer extremes of the Basseri population which preserves the homogeneity of the group in terms of wealth.

This situation contrasts sharply with that found among the Yomut. The most obvious difference between the two tribes, each viewed as a political unit sharing certain territorial rights, is that the Basseri are characterized by a continual sloughing-off process and the Yomut are not. This is a result of two features of Yomut economic organization: first, the fact that the developmental cycle of domestic groups among the Yomut entails far lower risks of economic failure owing to limited labor resources, and second, the fact that employment as shepherds and the assistance of close kin provide alternate means of support and means of economic recovery for families whose herds fall below the number necessary for their support, means of support which do not exist among the Basseri except for very limited shepherding opportunities.

Concerning the process of sedentarization through impoverishment, Barth observes that men with no children, or with only daughters, are especially prone to settle (Barth, 1961: 117). Among the Yomut men with no children are able to secure at least a minimal source of labor through the adoption of a son. Men with only daughters are aided both by adoption and by the very substantial bridal payments received at each daughter's marriage. At the time of my research bridal payments among Yomut *charwa* fell in monetary value in the range of 6,000 to 8,000 tumans, while that recorded among the Basseri in 1958 fell in the range of 500 to 1,000 tumans (1961: 139). Despite some decline in the value of the tuman between 1958 and the mid-1960's this represented a considerable difference.

Barth also observed that a Basseri man has only a relatively short period between the establishment of his economic independence, at or shortly after his marriage, and the point at which his own sons begin to claim their patrimonies, usually a period of about twenty years (1961: 107). During this period he must build up a sufficient herd to withstand the fragmenting effect that the separation of his sons will have. Among the Yomut the fragmentation occurs much later in a man's life – when his sons are approaching their forties – and the process is prevented from going too far by the practice of ultimogeniture. The Basseri sometimes delay the majority of the youngest sons in a similar fashion until the father is old and assumes the role of a dependent in his son's household, but the practice is not universal (1964: 75). Thus, the developmental cycle of domestic groups characteristic of the Basseri entails far higher risks of economic difficulty owing to limited labor resources.

Of course not all risks of economic difficulty experienced by these two groups result from a limited labor supply. In both of these groups natural hazards and high expense cause periodic setbacks for all pastoral households. But the economic consequences of severe setbacks are far less deleterious for Yomut since they can call on the assistance of kin and have opportunities for employment as shepherds.

Thus a comparison of the economic organization of the Yomut and the Basseri, reveals that the organization of the Yomut differs in precisely those features which lead to a continual process of impoverishment and consequent sedentarization among the Basseri. These differences in economic organization, most of which are at the same time differences in the domestic sphere of life, are summarized in the following table:

Differences in the Economic Organization of the Yomut and the Basseri

Yomut	*Basseri*
Ultimogeniture	No consistent practice of ultimogeniture
Consistent adoption by men without sons	Adoption less frequent
High bridewealth	Low bridewealth
Men reach their majority between 35 and 40	Men reach their majority at, or soon after, marriage
Close kin provide extensive assistance in time of need	No extensive aid between close kin
Opportunities for employment as shepherds numerous and relatively rewarding	Opportunities for employment as shepherds infrequent and not rewarding

The above comparison has been concerned exclusively with factors affecting households falling near the poorer extreme in terms of variation in wealth. Barth also observed, as mentioned earlier, a process of sedentarization of those representing the wealthier extreme among the Basseri. Although this process is statistically less significant (1961: 107–8, 111), it is relevant to the present comparison with the Yomut. Among the Yomut *charwa*, as among the Basseri, there are a number of factors which operate to check excessive accumulation of wealth. One such factor is the need to employ shepherds for the care of large herds and the consequent expense entailed. Another is the tendency for wealthy men to acquire brides for their sons earlier and the tendency of the very wealthy men to enter into polygynous marriages and, thus, to dissipate a part of their wealth in bridal payments. Such factors, however, are not fully effective in checking the growth of very large herds, and the exceptionally wealthy man (*bay*) is a familiar figure among the pastoral Yomut. These individuals play an important role in the economic organization of the *charwa* by providing the primary source of employment for shepherds. At the time of my research there was a distinct tendency for those whose herd rose in size above about a thousand small stock to take up sedentary life among the agricultural Yomut. Greater opportunities for the investment of surplus wealth and the greater comforts of sedentary life were the basic causes of this tendency. However, it is important to note that most such pastoralists who settle owing to great wealth continue to keep a large portion of their wealth in the form of livestock which they place as *emanets* among the pastoral population. Such settled *bays*, therefore, continue to play their role as a source of employment for poorer nomads. Arrangements of this sort are facilitated by the fact that the nomads do not move far in their yearly rounds and that wealthy nomads who become sedentary do not settle far from their original location. Thus, frequent contact with those who manage their livestock is possible. It should also be observed, however, that wealthy men with fewer than a thousand small stock who are themselves nomadic also frequently employ hired shepherds. Thus, those who become wealthy among the pastoral Yomut, including those who eventually are led by their wealth to leave the pastoral population, continue to play an important role by providing employment for poorer *charwa*. This situation contrasts with that among the Basseri in which those who settle because of wealth seem to play a less active role in relation to those who remain nomadic.

The pattern of movement by which a few very wealthy pastoral Yomut periodically leave the pastoral population was at the time of my research recent in origin. Earlier a different pattern of movement between the *charwa* and *chomur* populations occurred and this earlier pattern of movement deserves some discussion.

The Earlier Pattern of Population Movement Between Charwa and Chomur

Before 1930 there was a tendency for poorer pastoral Yomut to move into the niche of the agricultural Yomut, and a reverse tendency for wealthier agricultural Yomut to move into the pastoral niche. This pattern of movement between occupational niches has some similarity to the continual process of sedentarization characteristic of the Basseri. At the same time it has some very profound differences which are especially relevant to the current comparison as a brief description of this pattern of movement will show.

At this earlier period, as at present, the Yomut *chomur* occupied the better watered southern portion of Yomut country whereas the *charwa* occupied the more arid northern portion of Yomut territory. The *chomur* at this time were predominantly occupied with rainfall cultivation of wheat and barley and secondarily with raising sheep and goats. Arable land existed in surplus of demand in the territory of the *chomur* so that each family was free to claim and cultivate as much land as they pleased. In effect the opportunity to claim unused agricultural land in the southern portion of Yomut country, provided an alternate means of support for pastoral families who had, in one way or another, lost their livestock. I have discussed this pattern of movement between the *chomur* and *charwa* populations in greater detail elsewhere (Irons 1969). However, the following points are especially relevant to the current comparison and therefore demand at least brief discussion: (1) movement into the *chomur* niche was only one of several means by which a pastoral family with insufficient livestock could find an additional source of income; (2) those pastoralists who turned to agriculture did not become landless sharecroppers with little opportunity for improvement of their economic conditions; (3) those who became *chomur* did not in any sense cease to be Yomut.

Employment as shepherds and the assistance of kin, which are today the only means of support for impoverished pastoralists, were also quantitatively important in the past. Thus, a pastoral family which had lost its livestock, but which had several able-bodied male members could usually weigh the relative advantages of seeking shepherding arrangements or of turning to agriculture. (Extensive reliance on the assistance of kin was characteristic only of families lacking a sufficient number of able-bodied males.) There is considerable evidence to support the proposition that impoverished Yomut *charwa* were, as a rule, willing to turn to agriculture only if they had close relatives among the *chomur* with whom they could take up residence. Most large descent groups have always been represented among both the *chomur* and the *charwa*. Then, as now, many *charwa* had close kin among the *chomur* with whom they maintained contact through reciprocal visiting. For such people migrating permanently to the territory of the *chomur* did not entail abandoning the assistance of co-resident close kin.

Those who did turn to agriculture claimed as much unused land as they wished and this land then became their private property. They were thus not reduced to the unfortunate position of landless sharecroppers lacking opportunities for upward economic mobility. Many *chomur* were able through agricultural labor to acquire substantial wealth and as mentioned above there was a tendency for such wealthy *chomur* to become pastoralists. Equally important for the current comparison is the fact that those who turned to agriculture continued to be members of the Yomut tribe as a political entity.

This situation contrasts sharply with that described by Barth for the Basseri. Among the Basseri, only a few impoverished pastoral families can find employment as shepherds and the majority of the poor have no alternative to taking up agriculture in a sedentary community (1961: 109; 1964: 78). Those who turn to agriculture become landless sharecroppers or agricultural laborers with very little opportunity for upward economic mobility. At the same time turning to agriculture, in the case of the Basseri, means abandoning participation in their tribe as a political entity.

Adaptation to Demographic and Political Circumstances

Both the Basseri and the Yomut gain access to certain important economic resources through membership in corporate groups. The corporate estate of the Yomut consists of all pasture, natural sources of water, and unused arable land within the boundaries of Yomut country. These resources can accommodate only a finite expansion of the total Yomut population. Beyond a certain point, growth in the population of the Yomut would lead to the exploitation of all available arable land and to severe overgrazing of pastures. Beyond this point further population expansion would be possible only if Yomut territory itself were expanded, or if there were a substantial emigration of Yomut out of Yomut country. The Yomut population, however, seems only very recently to have reached the point of straining the collectively held resources of the tribe. Although there has been movement, as mentioned above, between the *charwa* and *chomur* niches within Yomut country, there has never been any significant emigration out of Yomut country. Arable land existed in surplus of demand until quite recently and the recent closing of land has been a result of a large influx of non-Yomut into the more fertile portions of Yomut country.

The corporate estate of the Basseri consists of usufruct rights to pasture and water in particular regions at particular seasons. These rights are arranged in such a way as to allow the Basseri to follow their annual migratory cycle. This estate, known as the *il-rah* (tribal road) of the Basseri, represents the only resources to which a person can gain access by virtue of membership in the Basseri tribe. In contrast to the corporate estate of the Yomut, that of the Basseri does not contain resources which can allow a portion of the tribe to rely predominantly on agriculture. The *il-rah* of the Basseri can only support pastoralists. Again, as in the Yomut case, these tribal resources can only support a finite population, and expansion of the Basseri population beyond a certain point would require turning to other resources. According to Fredrik Barth, the Basseri population is continually expanding at a rate that would strain resources were it not for the continual process of sedentarization discussed above. This latter process represents, in effect, a turning to other resources beyond the collective estate of the tribe. Either the purchase of agricultural land or movement into the sedentary population as a sharecropper or agricultural laborer is clearly a matter of exploiting economic resources other than those held jointly by the Basseri tribe, and turning to such resources as a rule eventually entails complete abandonment of any exercise of rights to the resources defined as a part of the Basseri *il-rah.* Abandonment of the exercise of these rights also entails for all practical purposes abandonment of participation in the Basseri tribe as a corporate political entity.

Thus, the Yomut population was not until recently approaching the point of straining the resources available to the tribe and there was no movement out of the tribe as a political and territorial group. The Basseri in contrast are able to maintain a balance between people and resources only by a continual sloughing-off of surplus population.

The contrast in the political circumstances of these two groups is equally sharp. Until recently the Yomut were much more strongly committed to military prowess than were the Basseri. During the last century the Yomut, along with the other Turkmen tribes along the northwestern marches of Persia – the Teke, Salor, and Saryk – terrorized the population of northeast Persia and northern Afghanistan by extensive raiding for slaves. The Russian conquest of most of the Turkmen-inhabited regions of Central Asia in the latter part of the nineteenth century curtailed these activities drastically, but the Yomut on Iranian soil continued to raid extensively into neighboring sedentary regions both for livestock and for children to be taken as slaves. They also continued to collect tribute from their immediate sedentary neighbors in return for "protection." The defeat of the Yomut by the Iranian army in 1925 led to further curtailment of raiding but not a complete and instantaneous one. Raiding continued on a smaller scale into the decade of the thirties despite an extensive effort to completely pacify the Yomut. During the Second World War the Russian government occupied northern Iran, and the more thinly populated portions of Yomut country – the regions of the *charwa* – were left de facto without a government. In those regions, which are at present the most conservative areas within Yomut country, raiding enjoyed a temporary revival during the decade of the forties. During the 1950's pacification of the *charwa* again made progress, so that by the 1960's even the most conservative communities had abandoned all raiding activities and all attempts to resist the agents of the government by military force.

The Basseri, like the Yomut, have been greatly affected by the strengthening of the Iranian central government and the pacification of rural areas. However, the Khamseh confederacy of which the Basseri are a part have never been as strongly committed to military exploits as the Yomut. They have not raided very far from their home territory and have not engaged at all in slave raiding. They were never, in contrast to many of the Yomut, able to resist completely the collection of taxes and conscripts by the central government.

The interpretation suggested in this paper rests on the assumption that the balance between political and demographic pressures have been different for these two groups. For the Basseri loss of members has represented a loss of some military power, but has provided a compensating gain in helping to maintain a balance between population and economic resources. In the case of the Yomut, loss of population would have entailed diminution of military strength without any comparable compensating gain. This combined with the greater commitment of the Yomut to military prowess means that a process which has been adaptive for the Basseri would have been highly inadaptive for the Yomut.

In the light of this interpretation, the different economic organizations of the Yomut and the Basseri can be seen as effective adjustments to different circumstances. This interpretation also suggests that the changing circumstances within which the Yomut find themselves will eventually force a readjustment of their economic organization. Increase in the population of Yomut territory both through immigration and a high surplus of births over deaths have recently led to a disappearance of unclaimed arable land. Effective pacification has eliminated the military value of population increase. Such a change will probably eventually lead to an alteration in the way the Yomut perceive their interests.

In the past, economic support of impoverished relatives could be readily perceived as politically advantageous. In order to appreciate fully how this was so, it is necessary to consider the fact that the political affairs of the Yomut were largely governed by segmentary opposition. Hostilities between the larger subdivisions of the Yomut especially livestock raids, were frequent. Below a certain level in the hierarchy of political segments violence was infrequent, but even at the lowest levels in the lineage system segmentary opposition was the basic factor shaping political affairs. There was no hierarchy of chiefs with sufficient authority to adjudicate disputes. Conflicts within segments that were normally internally peaceful were thus prosecuted by the disputants mustering support along lines of agnatic genealogy. Those who were closer to neither party were obligated to press for a peaceful solution and to attempt to prevent bloodshed.

The importance of this situation lies in the fact that for each individual Yomut not only the numerical strength of the larger political segments to which he belonged, but also that of the smallest ones was important to him. Thus economic support of temporarily impoverished kin could be seen as a rational preservation of one's political assets. Both because of preferential lineage endogamy and because non-agnatic kin ties were not traced far, supporting kin and supporting agnates were basically the same thing. Given the insecurity of wealth among the pastoral Yomut, economic assistance to kin could also be seen as economic rationality since a man of wealth with poor relatives might find his situation reversed in the future. Under these conditions there was no sharp conflict between the moral norms of assistance to close kin and self-interest.

However, current changes will eventually create a new balance of interests. The more effective the government becomes in suppressing self-help through violence in the political sphere, the less value will be placed on a large number of agnatic kin. If at the same time population reaches the point of straining resources, obligations to impoverished relatives may come to be viewed as more of a burden and the preservation of general economic security may be viewed as less important than the preservation of one's own economic prosperity. Such a shift in the perception of individual interests could lead to a conflict between the accepted norms of the past and the expediency of the present, and eventually such a conflict might lead to a change in the direction of an economic organization more closely approximating that of the Basseri.

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Ethnic Boundary Maintenance among Pastoralists and Farmers in the Western Sudan (Niger)[1]

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THE CHIEFTAINSHIP of Mangari, anciently the province of Bornu north of the River Yobe, is an area of tremendous ethnic complexity, recapitulating the ethnic segmentation of the eastern and western Sudans which has so bedeviled attempts at culture area classification (Horowitz, 1967). Ethnicity is the major organizational feature of Mangari: exploitation of the principal ecologic niches – herding and horticulture – and many occupational categories, such as trade, butchery, water portage, and administration, are identified with particular ethnic groups. Ethnicity is made explicit in external insignia, as persons reveal their memberships by language, dress, facial markings, house types and settlement patterns, games, and other customs, and in transactive behavior: for while members of different ethnic groups may be involved in economic exchanges and political prestations, the bulk of social interaction occurs within the bounds of the group (Barth, 1969: 9–38).

This "ethnic division of labor" (as Carleton Coon terms it [1958: 3]), is widely distributed in Africa and the Middle East. Without being here concerned with the origins of the system, our focus is on how it is maintained. Our position is that location at a specific trophic address is a consequence of conscious strategies, and these strategies are canalized by ethnicity. Pastoralism and farming, according to local points of view, are not merely ecologic commitments but also cultural ones.

Bornu shared the Sudanic State form of organization which allowed for moderately peaceful relations among disparate peoples and relatively secure conditions for long distance trade. During the last decade of the 19th century Kukawa, the capital, was seized by the Sudanese warrior Rabeh, and inter-ethnic hostility became overt and increasingly violent in such provincial areas as Mangari which were remote from Rabeh's direct control. The Manga feared especially the Tuareg who attacked swiftly and deeply into their country, carrying off animals and people. The Manga themselves were not averse to capturing hapless strangers in their midst and were active buyers in the slave markets. Had Rabeh lived to consolidate his gains he might have restored full imperial control, for he attempted to provide effective provincial administrations. But Rabeh was killed by the French at Kousri in 1900, an event which ushered in the period of direct European authority (Horowitz, 1970). For several years it was uncertain which colonial power would rule Mangari. The Mission Tilho of 1906–1909 finally divided the country along the Yobe, with the British to the south and the French to the north. This division is the current eastern frontier between Niger and Nigeria.

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The French peace, with the cessation of raiding and slaving, allowed for a new movement of stranger peoples (Skinner, 1963), and large numbers of Fulfulde-speaking pastoralists entered Mangari from the west and south. The principal ethnic and ecologic confrontation today is between so-called "Fulani" (i.e., Tuntumanko'en, Woḍaaḅe, Uda'en, Abore, Bornanko'en) cattle, sheep, and goat herders, on the one hand, and the indigenous Kanuric – speaking Manga, Mobeur, and Djetko farmers, on the other. A smaller but still substantial number of traders, craftsmen, clerics, laborers, and administrators from Dagara, Hausa, Buzu, and Songhai-Djerma origins immigrated, as did occasional Ibo and Yoruba cattle and hide dealers, Dahomean and Togolese clerks, and Senegalese and Malian soldiers. Remaining from before colonial days are Tubu and Arab farmers, herders, and traders, and on the fringes of the region Kanuri, Kanembu, andBuduma farmers, fishermen and herders.

The district of Niger Bornu in which we worked in 1967–1969 and 1970 is Mainé-Soroa, with a population of about 70,000 persons, equally divided between pastoral and sedentary peoples. This district, at 13° North latitude, is in the northern sahel, near the limits of the cultivated zone as it shades into true desert. Its most pronounced climatic feature is aridity: rainfall stations measure some 400 mm mean annual precipitation, with great and unpredictable variations in quantity and distribution. Total precipitation for Diffa[1] on the Komadugu Yobe in 1949 was reported to be only 67 mm! The fall may be evenly distributed throughout the four months of the rainy season, or may be concentrated in a few intense periods. Contiguous areas often experience much difference. The responses of herders and farmers to changing conditions of rainfall obviously differ and sometimes conflict. For example, a sudden dessication in pastures before millet fields have been harvested may cause animals to enter and consume the grain. In 1968 and 1969 early rains led the grass to germinate, and the immature seedlings were subsequently burned by the sun, with many farmers complaining of animal incursions in their fields.

In the western half of Niger there is a clear demarcation between the *zone nomade* and *zone sédentaire*, and pastoralists are not permitted to move their herds southward until some officially-established date, after which the farmers have no legal complaint if animals enter their fields before the harvest is complete. But in Mangari herders and farmers share the country throughout the year, and specific valleys and basins have been traditionally reserved as pasturage since the original entry of the Fulani. As the area is relatively free of disease-carrying flies, cattle are not forced northward during the rains. That is, Manga villages and Fulani camps are interspersed along the countryside at all times, and some herders are present throughout the year and attend the weekly Manga village markets.

This multiple occupation of the terrain does not present serious problems during much of the year, but relations are variable between herdsmen and farmers. The farmers are glad to have the pastoralists herd their animals on cropped fields, exchanging fodder for manure. Those farmers who have invested in wells have a competitive advantage in attracting the animals, since herdsmen

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1 Mean annual precipitation for the decade 1961-1970 at Mainé-Soroa was 431.6 mm during forty days of rain, most of which fell during July and August.

Year	*Total rainfall in mm./days of rainfall*	*Percent of fall in July-August*
1961	564.6/48	89.1
1962	483.6/36	90.2
1963	362.5/48	66.0
1964	650.4/38	87.7
1965	271.7/37	67.8
1966	432.1/42	66.3
1967	490.8/36	86.5
1968	343.7/47	46.8
1969	224.4/35	58.2
1970	492.2/32	67.5

$\sigma = 125+$ mm
$\sigma = 5.6+$ day

Precipitation was highest in 1964 when 650.4 mm fell during 38 days, and lowest in 1969 with 224.4 during 32 days. This extreme variation in an environment so dependent upon its brief cultivating season, means that the farmer has little assurance that any particular strategy about when to plant will result in the optimal harvest. Not only is the total variation great, as can be seen in the standard deviations, but the farmer has no indication from the first onset of the rains as to what will follow. For example, in 1969 rains fell successively on the 11th, 12th, 13th and 16th days of May. Most of the farmers had sown their fields, but rain did not fall again until the 24th and 28th days of June, and much of the seed was therefore lost. On the other hand, in 1965, which had the second lowest total rainfall of the decade, the rains began on June 6th, and continued to fall on the 10th, 12th, 13th, 14th, 16th, 20th, 22nd, 24th, and 25th, which allowed the seedlings a firm hold. In 1967, one of the high years with 490.8 mm, there was only one day of rain in April, one in May, and two widely separated days in June. Then 332.5 mm fell during 14 days in August.

are able then to water their flocks with minimum effort, and will remain longer in those fields. Fulani men sell animals in the village markets (through the medium of a Manga or Hausa broker, called *dilali*), especially when funds are needed for annual payment of taxes, and Fulani women sell milk, butter, and cheese, and sometimes their labor to pound millet. Fulani buy millet and spices from the Manga, and other items (like perfume, kola nuts, and cloth) from the mainly Hausa traders who travel from market to market.

With the exception of the Woḍaaɓe, who are called "Anagomba" by outsiders, the other Fulfulde-speakers farm as well as herd, and their fields are as vulnerable to animal incursions as are those of the Manga, though their cultivation is very much less extensive than Manga cultivation, and the bulk of Fulani effort is devoted to herd management. On both sides much energy is consumed in keeping animals out of the fields. The herders have to keep close watch, especially when rainy season pastures begin to decline, and the farmers guard their fields, and fence those which are close to the pastures and trails along which the animals move.

During the harvest season tensions rise. The farmers claim that herders allow or even encourage their animals to penetrate the fields and eat the young plants. The herdsmen counterclaim that the farmers intentionally cultivate in proximity to pastures or basins where waters collect in order to entice cattle into the fields, and then have them seized or have the owner pay compensation disproportionate to the amount of damage. They feel that the administration almost invariably favors the farmers, who were the original occupants of the area.

The Niger government has continued the colonially-established legal system in which major crimes – large-scale theft, murder and violence, smuggling, etc. – are the domain of the courts and the police, while "civil" cases – such as divorce when initiated by the wife, disputes over inheritance, credit, and trust, and nomadic-sedentary conflicts – are heard by the Customary Tribunals, which attempt to mediate interethnic disputes with reference to a common body of Islamic jurisprudence. At the lower levels, those of the village and cantonal chiefs, these courts are merely advisory and conciliatory, but disputes may also be taken to the Sub-Prefect who has the power to enforce settlement. Pastoralists are reluctant to allow cases to be taken to the Sub-Prefect since he may insist that a census be taken of the herd: animals are taxed by the head, and their numbers are therefore usually underreported. The herdowners frequently try to settle "out of court". If the herders were full-time specialists they could more easily opt to move out of the country, but their investment in a cultivated field, although relatively small compared to their investment in animals, limits their mobility and weakens their bargaining position. On the other hand, as we shall note below, the farmers are interested in good relations with the Fulani since they frequently consign to them their own animals and want to insure that they will receive proper care.

We have complete demographic data for two Manga villages, a Bornanko'en Fulani group, and a Sudusikaya Woḍaaɓe group. These data are summarized in Table I.

Table 1

Group	*Number of Inhabitants*	*Number Mature Sheep & Goats*	*Ratio of Sheep & Goats to People*	*Number of Mature Cattle**	*Ratio of Cattle to People*
Manga 1	129	316	2.45	52	0.40
Manga 2	133	327	2.46	45	0.34
Bornanko'en	219	630	2.88	381	1.74
Woḍaaḅe	235	563	2.36	1318	5.60

* Cattle figures, especially for the latter two groups, are likely to be understated.

It is clear from the figures in Table I that a critical distinguishing feature of these groups is the ratio of cattle to people. While the number of sheep and goats varies insignificantly from group to group, the Bornanko'en have between four and five times the cattle ratio of the Manga, and the Woḍaaḅe have approximately 15 times.

The Manga are horticultural specialists. During the rainy season, when cattle must be kept away from the cultivated fields, they are involved in a full-time operation. Fields are cleared of remaining stubble by cutting and burning at the end of the dry season in April and May, and the millet is sown at or before the first rains. As soon as the rains begin to fall fields must be weeded regularly, to prevent the encroaching grasses from choking the seedlings. During all this time fields have to be protected from animals, and fences of thorns are maintained and guards posted where animals are likely to pass by. As the plants mature toward the end of the season, villagers spend much time in the fields chasing off birds. Harvesting takes place around late September and October. The Manga farmers cut the millet and store the heads in raised grass silos in the fields, threshing them as needed, or they thresh them in large quantities for storage underground. Some of the stalks are cut to be tied into fencing, and the rest is left for pasturage. The few cattle which are owned by these villagers are consigned to a Fulani herder who is responsible for keeping them out of the fields. A full-time shepherd watches over the village sheep and goat herd. It is important to note that less than thirty percent of village households own any cattle at all.

Every Woḍaaḅe family and almost every Bornanko'en family has its own cattle. The Bornanko'en are mixed farmers, whereas the Woḍaaḅe are cattle specialists. Thus during the rainy season, Bornanko'en families divide, with younger boys responsible for keeping the cattle in pasturage and well away from the fields. These families are deprived then of their labor for cultivation, and this is reflected in the substantially smaller size of Bornanko'en fields as compared with those of the Manga. For land is not a commodity in short supply in most of Mangari. (Very productive land, especially irrigated land along the Komadugu Yobe, is of course scarce and much desired.) Anyone can obtain bush land for cultivation by requesting it from a Manga chief. The people say:

"The Manga chief rules the land and the [Manga] people; the Fulani chief rules only the [Fulani] people." That is, the land belonged to the great Manga chiefs (theoretically as stewards for the Kanuri Shehu of Bornu), and through them to the local chiefs. When the Fulani entered originally some 60 years ago they were granted land by the Manga.

The amount of land which will be farmed then, by either Manga or Fulani, depends primarily on the amount of labor which can be mobilized. There is little exchange of labor for cash, except in the very largest villages. The domestic family provides labor for the fields, occasionally supplemented by reciprocal work groups; thus, the more wives a man has the more land he can work, using their labor and, if the marriage has endured to the point where there are children old enough to work, the children's labor also. Of course the larger the family the greater its consumptive demands on the harvest, which limits the possibility of expansion of surplus. It is also the case that the man with several wives is likely to be wealthier, and, as a Moslem, under pressure therefore to express his status with female seclusion, discouraging him from exploiting his wives' labor in the fields where they can be seen by other men.

The Woḍaaɓe maximize cattle production by avoiding cultivation altogether. The increased size of their herds allows them enough of a surplus in milk, butter, cheese, and occasionally in meat, to trade with the farmers for surplus millet. Woḍaaɓe, who build no huts, whose goods are few and portable, are extremely mobile, and move rapidly throughout a wide area extending from Tanout in the west to Nguigmi in the east, and south into Nigeria, in the search for good pastures, water, and interesting markets. Their dependence on acquiring millet through trade rather than through self-production renders them more vulnerable to scarcity and price changes than are the other Fulani, but they more than compensate by having many more animals.

For while land in Mangari is easily available, it is not a good source of investment. The marginal returns from increased labor input are very slender. Once granted for cultivation, land remains the property of the farmer as long as he uses it. (There is some difference of opinion in the area as to whether the land is his to sell if he has not used it for an extended period of time, or if it reverts to the chief, but this is generally academic since there is much open land and people move freely from one village to another.) Pasturage, on the other hand, is never assigned to an individual, and may not be converted to horticulture without permission of the chiefs or the Sub-Prefect. This lack of exclusive tenure means that any herder can move his animals to any pasture, although herders tend to move within traditional orbits. Fulani herders, incidentally, fully understand the degradation that results from overgrazing, but feel that their own system of land use, among other reasons, dissuades them from reducing herd size, since nothing could prevent another herder from moving his animals on to the improved pastures.

Cattle are an obvious source of investment since cattle breed cattle, and the animals are readily convertible into almost all other values. All peoples in the area measure wealth in cows. On this point there is universal agreement. Four

Table 2

Bornu Peoples Ranked by Wealth
Informants

Rank	*Koyar*	*Kambar*	*Lawan Gaptia*	*Ba Kambar*
1.	Tuareg-Buzu	Washiri	Hausa	Kano (Hausa)
2.	Fulani, Tubu	Shuwa, Tuareg-Buzu	Fulani	Tuareg
3.	Djetko	Fulani	Tuareg	Bodowe, Djetko, Shuwa, Tubu
4.	Kanuri	Tubu, Buduma	Shuwa	Mobeur
5.	Hausa	Bodowe	Dagara	Kanuri
6.	Manga	Djetko	Tubu	Bade
7.	Dagara	Manga	Bade	Manga
8.	Bade, Mobeur	Hausa	Manga	
9.		Kanuri	Bodowe	
10.		Dagara	Kanuri	
11.		Bade	Mobeur	
12.		Mobeur	Djetko	

elderly Manga informants ranked all Bornu peoples in terms of relative wealth, with the distribution shown in Table II.

It is clear that pastoral peoples, such as the Tuareg, Fulani, Tubu, Buduma, Shuwa, and Washiri are ranked consistently higher than such horticulturalists as the Kanuri, Manga, Mobeur, Bade, and Dagara. (Lawan Gaptia and Ba Kambar ranked the Hausa high, thinking of the great wealth of the city of Kano, rather than of the Hausa farmers in small villages.)

We shall explore the relationship between ethnicity and ecology in terms of one question: why do the Manga farmers, who respect wealth and understand fully the investment advantages of cattle ownership, not devote themselves more effectively to animal husbandry? Why do they leave that niche to Fulfulde-speaking peoples, who are more recent immigrants to the region? We have only the beginnings of an answer, perhaps little more satisfactory than the folk explanation, "that is not our way". The explanation lies in the kinds of judgments which people make about the adequacy of their performances. That is, it depends upon values which define the kind of life considered proper and meaningful by members of each ethnic group.

Our studies of Fulfulde-speaking peoples confirm the observations made by Dupire (1962) and Stenning (1959), that circulation of cattle serves to reinforce all social relationships. Animals are exchanged at marriages, loaned (*nanga na'i*) to friends and kinsmen, given to chiefs and to junior members of chiefly families. A man who loses his herd or whose herd falls below the number requisite for subsistence and social needs may farm more intensively, since he can obtain land with ease. But farming is seen as a temporary necessity, until herd size can be once again increased to the point where it will sustain his life.

The unsuccessful Manga farmer however, cannot herd, for he has no way of obtaining the animals. What about the successful farmer, or the man who combines horticulture with trade? What restricts his acquiring a herd?

As we have seen, there are cattle in the Manga village. Slightly more than a fourth of village households own some cattle. But the mean number of cows per household in a Manga village is less than the mean number of cows per person among the Bornanko'en Fulani, and only three households in our sample have as many animals as the average Bornanko'en household. The mean size of the Woḍaaḅe household herd is more than twice as large as the largest Manga herd, although some of this difference is a function of the larger size of the Woḍaabe household. These figures are shown in Table III.

Table 3

	Number of Adult Cattle per Household	*Mean Household Size*
Manga	97/64 = 1.5	4.1
Bornanko'en	381/47 = 8.1	4.7
Woḍaaḅe	1318/37 = 35.6	6.4

When a Manga owns cattle he has the choice of raising them himself or of consigning them to a professional herder, for example a Bornankejo or a Ḅoḍaaḍo. If the Manga herds himself he must abandon the village, and the kind of life and interpersonal relationships favored by the Manga, for the lonely, in his view fearful life in the bush. Manga, as the Bantu villagers reported by Turnbull (1962), see the bush as hostile. The Manga ideal of the good life stresses housing, clothing, a large and varied diet, and a farm. The Manga rank occupations almost in terms of ritual purity. All Manga are *talaka* ("commoners") since they were all subordinate to the Kanuri Shehu of Bornu. The ideal life is receiving respect for being a successful farmer, having many sons who live nearby and who defer to their father in all matters, providing well for a wife (or wives) and children with clothes, food, and jewelry, and maintaining wifely seclusion. To cap off such a life, one should make the pilgrimage to Mecca. The other respected occupations, which may be combined with farming, are those of the Muslim cleric and the trader. Demeaning, shameful (*nangua*) occupations are butchery, water-portage, domestic service, and musician/praise-singing. In between are the nonprestigeful but nonshameful professions, such as the barber and the smith. The successful Manga farmer prepares an estate for his children, provides food and hospitality to visitors, even if they are strangers, follows the Islamic prescriptions of prayer and Ashem (Ramadan), and supports political and economic superiors.

The Manga feels that his ability to perform properly would be compromised as a herder for he would then have to accept a substantially reduced consumptive profile, and he therefore consigns his few cattle to a Fulfulde-speaking specialist. But this is risky, since he has few claims on the loyalty of the herder.

By limiting the number of animals he has he reduces the risk of great loss. The Manga feel that the Fulani do not give Manga animals the care they give to their own; for example, they say the Fulani deprive Manga calves of milk, while allowing their own calves to suck as much as they need. They accuse the Fulani of smuggling Manga animals across the border for sale in Nigerian markets, and then claiming that the animals were stolen or that they ran off. Many such disputes are heard by the Customary Tribunals.

Despite the assumed wealth of the herders, Manga look on the Fulani with contempt. My young Manga assistant one day proudly showed me his new blue jeans, which he bought in the market, and called them "cowboys". A "cowboy", the explained, was a strong man who killed people and was respected by all. He was deeply offended to learn what the word meant in English: "a man who takes care of cattle."

Except for their great chiefs, Muslim Fulani in Mangari do not seclude their women. And Woḍaaḅe, considered to be pagan by other peoples, have been called by Manga and Hausa "the Europeans of the bush," because Woḍaaḅe men and women walk with each other, and even eat with each other in public. (The Manga feel that even the Hausa are lax, for although they properly seclude their women, Hausa husbands and wives are reported to eat from the same plate, which shows a lack of self-respect on the part of the husband and of deference on the part of the wife).

To be a herder means to abandon the village for a mat on the ground and a semi-circle of thorny bushes instead of a proper hut. It means a poor, frequently milletless diet. And it means poor clothing, either the simple short-sleeved tunic of the Muslim Fulani or the goat-skin skirt of the Woḍaaḅe.

Manga reinforce their negative attitudes toward the herders by a whole series of stereotypes: the Fulani are dirty, they are false Muslims, they are thieves, their women are promiscuous, and, most devestatingly, they are always in the bush. The catalogue is very long.

I have earlier mentioned that ethnic differences are signalled in many ways: by settlement forms, by dress, speech, hair styles, scars and tatoos, etc. (In certain inter-ethnic transactions these differences may be understated, as when a Boḍaaḍo, seeking information from villagers about missing animals, wears a cloth tunic, carries prayer beads, and speaks Kanuri or Hausa.) There is one other cultural idiom that might be stressed, and which acts to inhibit the movement of a man from one group to another. All peoples in the region have characteristic ordeals, by which young men demonstrate their virility. For the Manga it is wrestling; for the Fulani it is *sharo*, in which reciprocal challenges are offered to exchange beatings with a long stick or club; for the Woḍaaḅe it is a form of dueling with cattle staffs. Performance in these activities is remembered in story and song, and a man who has done poorly as a youth is compromised as an adult.

The above argument does not say that it is impossible for a Manga farmer to adopt a pastoral way of life. What we have tried to show is that membership in an ethnic group involves a set of behavioral standards which affect the choices an individual makes, and tends to support customary ways of acting. It therefore helps to maintain the distribution of specific ethnic populations in ecologically distinct settings.

Summary

The environment supports three major exploitative activities: horticulture, pastoralism, and mixed farming, practiced respectively by the Manga, Woḍaaɓe, and Muslim Fulani. Because land for cultivation is available easily and without cost, anyone may farm. Muslim Fulani and Woḍaaɓe have institutionalized means of acquiring cattle which enable them to rebuild their herds when, through disease, predation, or other loss, their numbers drop below the point where they can sustain themselves and the humans who depend upon them. The Manga, on the other hand, acquire cattle only through purchase and natural increase. The demands of their farms do not permit them to pay adequate attention to the cattle during the cultivating season, when the animals must be kept away from the planted fields. Therefore they are presented with an alternative: to abandon the farm and assume a pastoral existence, or to consign the cattle to a specialist with the tacit recognition that the herd will not increase to its natural potential, because the herder siphons off some of the animals for his own use. Those Manga who own cattle elect the latter alternative; though it minimizes the possibility of economic gain, it does not remove them from full participation in other relations, based in the village which, they explain, give their lives richness and meaning. The ethnic-ecologic mosaic is maintained as a result of conscious choices of the individuals of the region.

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The Development of the Kalat Khanate*

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SOUTHWEST ASIA is an area of great ecological and ethnic diversity, and great historical depth. The types of political organization found in the area are many; the centralized bureaucratic state, the extended empire, the kin-based tribe headed by an autocratic chief, the tribal confederacy and segmentary acephalous structures are all represented. Along with the diversity of political structures, frequency of contact between societies at different levels of integration, and the related lack of stable, clearly defined boundaries are characteristic. These factors have produced political systems in which two basic principles are combined in various ways. One is tribal, based on personal loyalties expressed in a genealogical idiom; the other is bureaucratic, based on territorial administration through a hierarchy of officials. Both principles have been operative in Southwest Asia for centuries; kings, emperors and tribal chiefs have met throughout history, and ruling elites have always been aware of alternative political forms.

The confederacy level of political integration in the tribally organized societies of Southwest Asia has received relatively little attention from anthropologists. Such structures are not uncommon in the area, and they frequently embrace large numbers of people. Limited as they often are, to military activities, tribal confederations are both flexible and fragile. Their fragility is attested to by the ease and frequency of defections on the part of constituent units. Their flexibility is demonstrated by their ability to persist, albeit in altered form, through colonial periods and even within the framework of modern national states.

There is a tendency to treat confederacy integration as a superstructure, separated from tribal substructure and local groups by a "structural gap" (Sahlins, 1968: 46). The development of confederacy organization has also been viewed as a response to factors, usually political, originating outside the system (Barth, 1961: 86). In this paper we shall analyze one such confederacy, the Kalat Khanate (called the Brahui Confederacy by the British) in some detail, focusing on the genesis of confederation and the management of resources at the Khanate level. We suggest that confederacy structure developed in Kalat as a response to the ecological requirements of pastoral nomadic adaptation. The institutional development of the office of the paramount chief or khan was based on a specialized agricultural estate, the resources of which, prior to the rise of the Khanate, were not systematically integrated into the Kalat economy.

The territory of Kalat is presently wholly within the boundaries of West Pakistan, where it has the status of an administrative district. It is an area of some 30,000 square miles and is traditionally divided into the two mountainous regions of Sarawan and Jhalawan, and the lowland Kachhi plain. The landscape of Sarawan and Jhalawan is arid and austere, consisting of numerous parallel mountain ranges which enclose upland plateaus whose elevation is 5,000 feet or more. Some of these valleys are extensive, with a sizeable center of alluvial soil. Rainfall is scanty and erratic, rarely exceeding 10 inches a year, and often considerably less.

Kachhi forms the easternmost part of Kalat. It is a flat, triangular plain, a desert inlet from the Indus Valley. Its main characteristics are its levelness, excessive summer heat and periodic severe scarcity of water. There are a few rivers whose seasonal floodwaters are caught and used for cultivation. The annual rainfall averages about 3 inches, most of it falling in July and August.

The population inhabiting Kalat is ethnically and economically complex, consisting of both tribally organized people and peasant villagers. There are a number of economic adaptations, ranging from fully settled villages with large scale irrigation works, through transhumant groups who cultivate rainfall fields when possible and maintain flocks, to, finally, fully nomadic people. The tribal segment of the population is predominately Brahui speaking, with a minority of Baluch. Tribesmen are mainly pastoral nomads and transhumant cultivators. The non-tribal groups engaged in settled cultivation are the Dehwars in the uplands and the Jats in the Kachhi plain. The Dehwars are a local segment of the long established cultivating population of the Iranian Plateau, often called Tadziks in other areas. The Jats migrated to Kachhi from the Punjab sometime prior to the 6th century.

This complex ethno-ecological mosaic developed quite early in time. Fairservis has pointed out that permanent settlements with systems of water control and irrigation existed in the highlands prior to the rise of the Indus Civilization (Fairservis, 1967: 23). From the time of the Arab invasion in the 8th century, the Kalat region was subject to periodic upheavals as successive waves of raiders and conquerors moved from Southwest Asia to India. The area was subject to a variety of foreign powers who exacted tribute on an irregular basis. Between the 10th and the 15th centuries, Sarawan, Jhalawan, and Kachhi were frequently controlled by different suzerains, with the towns and villages bearing the brunt of tributary obligations.

It is probable that the uplands served as a refuge area during these turbulent centuries, with small groups of people whose lives were disrupted drifting into the hills, where a few agricultural villages were already established. Subject to pressures from raiders, and perhaps from the settled population as well, the coalescence of small, often unrelated, groups around successful leaders would have been adaptively advantageous within this environment.

The composite structure of the Brahui tribes supports this view. The two basic criteria of Brahui tribal affiliation are patrilineal descent and political allegiance, and the two are not necessarily congruent. There is no Brahui tribe with a coherent genealogy. Each tribe is conceived of as having been founded by a man, usually an emigrant to the Kalat area, from whom the group derives its name. Some primary sections (*takkars*) are seen as descending from his sons, others from founders unrelated to the tribal progenitor. It is the allegiance to the authoritarian chief (*sardar*) which produces internal coherence, not the genealogical charter.

Thus, the development of the Kalat Khanate is viewed as a response to the transhumant patterns of adaptation which require successive use of the highlands and the plain. Given the technology, the uplands could support many more people at one time of the year than at another. Large groups of people were forced to seek lowland pasturage in the winter to maintain their animals. The tribal population would not have been predisposed to conquer and settle in Kachhi because the severe summers on the plain would have adversely affected their animals and necessitated fundamental economic adjustments. Seasonal access to winter pasturage, not territorial expansion was the adaptive requirement. Prior to the 15th century, access to the plain does not appear to have been a problem. The permanent population of Kachhi was small and dependent on river irrigated cultivation. Large areas were uninhabited save for the seasonal presence of nomads seeking winter pastures. However, during the 15th century, there was a movement of nomadic Baluch from Southwest Persia into Kachhi. The presence of this new population disrupted the prior adaptational balance between the highlands and the plain, and the Brahui had a new competitor in its own niche.

Traditional history relates a long series of battles from the 15th to the 17th centuries, as groups of Baluch and Brahui competed for control of the highland town of Kalat and for various parts of Kachhi. The earlier development of Kalat town under various foreign administrators provided a natural geographical locus for consolidation of tribal power. The principle of a paramount chief appears to have been established during this period, but no institutionalized apparatus supporting and stabilizing the office had yet developed. The immigrant Baluch succeeded in seizing Kalat town several times, but they were never politically unified and were unable to establish a permanent presence there. The competitive pressure on the ecological resources of the nomadic niche was alleviated when the Baluch fragmented, with the majority settling down as sedentary landlords in lower Kachhi, the remainder joining with the Brahui tribes. A by-product of Baluch sedentarization and the competition for access to lowland pastures was the division of the rest of Kachhi among participant tribes. Thus, the Brahui tribes also became overlords to Jat cultivators, but they did not settle down in Kachhi.

With access to winter pasturage reasonably secure, the alliance of Brahui tribes seems to have lapsed for a time. Succession to the office of the khan was apparently weakly developed, and legendary material suggests that the throne was occasionally unoccupied for several years after the death of an incumbent. In the early 16th century, the Mughuls succeeded in establishing suzerainty, placing a governor in Kalat.

By the late 16th or early 17th century, a lineage, the Ahmadzais, succeeded in establishing a dynasty which endured until Partition in 1947. The details of the Ahmadzai rise to a position of pre-eminence among the tribes are obscure. However, certain ecological and political factors suggest that an alliance between the Ahmadzais and the Dehwari cultivators was crucial at the early stages. Most of the long settled irrigated land, especially in Sarawan, was crown land, and it was cultivated primarily by Dehwars. According to legend, it was the Dehwars, in combination with a few tribes, who backed the Ahmadzais in the manuvering for control of Kalat town. The Ahmadzais then had agricultural resources and allegiances that other tribal chiefs lacked. Thus, the office of the khan in its next phase became a specialized mechanism for the collection and coordination of fighting men and the resources necessary to maintain a court. The importance of the Dehwars is attested to by the fact that the khan's chief minister was always a Dehwar. No other group had such rights to office in the khan's court.

Up to this point, we've said the first two stages in the development of the Kalat Khanate were responses to niche competition between two tribal nomadic populations and the incorporation of an agricultural minority. The final stage of development which underlies the stabilization of the throne and the elaboration of the central bureaucratic apparatus was territorial expansion into the southeast portion of Kachhi previously under the control of Sind. The great battle between the forces of the Khan and those of the Kalora rulers of Sind was militarily inconclusive, but it allowed the khan to restructure land rights in Kachhi. The most productive areas were retained by the throne, while the tribes who participated in the battle were rewarded with new tracts or had their traditional rights reconfirmed.

Now the great increase in the Khan's estate allowed the throne to maintain a more lavish court with a proliferation of court officials. The court became the setting for elite interaction, with an elaborate protocol based on tribal ranking. The bureaucracy which administered the royal estate also increased. Hindu shopkeepers and money lenders came into the area, making it possible for Kalat to participate in a regional network of trade and finance. The Khanate developed its own systems of coinage and weights and measures. Thus, the Khanate as a supratribal level of organization served to standardize and integrate a number of economic activities which benefited the territory as a whole.

Even though the Ahmadzais consolidated a new order of structure, they did not integrate Kalat into one uniformly administered territory. Although a central bureaucracy developed, the khan never succeeded in incorporating the tribes economically. No revenues of any kind were exacted from them. Each tribal constituent of the Khanate was internally and territorially autonomous. The khan had no access to the tribes except through the chiefs. The Ahmadzais never succeeded in placing princes of the royal house in the chiefly aristocracy, although they did marry with the chiefly lineages.

The autonomy of tribal constituents in the Khanate is based on the authority of the *sardar*, which is largely a result of Brahui tribal structure. Brahui tribal organization is characterized by informal leadership at the residential level, and formal office at the section (*takkar*) level. However, common tribesmen derive their basic political rights by virtue of membership in the tribe itself, not by aligning themselves with a subtribal leader. The *sardar* influences the distribution of power within the tribe by forming special relationships with lower level leaders. Leaders do not compete with each other for followers; instead they compete for favored relationships with the chief.

The internal power structure of a Brahui tribe is all but invisible to the outsider. It is only partially known to the participating subtribal leaders, each of whom is aware only of the situation in his own locality. The *sardar* maintains his central position by forming a number of independent special relationships with lower level leaders. The development of power centers independent of the chief is hampered because 1) no structure relates the leaders in mutual interaction and 2) the *sardar* can disarm potential competition by incorporation or infiltration. There are no limits on the number of men he acknowledges, and he can repudiate the favored relationship at will.

An examination of the organization of caravan trade in Kalat is illuminating with regard to the relationship between the khan and the *sardars*. The khan attempted to set uniform tax rates and a fixed number of collection points within Kalat. The money collected at those locations falling within tribal territory went to the *sardars*, and those in crown territory went to the khan. The khan, however, found it difficult and at times impossible to enforce the schedule of rates and stations. Additionally, from time to time raiding parties of Eastern Baluch (Marris and Bugtis), and sometimes even disaffected Brahui raiders, attacked caravans. The khan's only sanction in such cases was to claim inability to protect the route and inform traders to use alternate trails. Such prohibitions were often used punatively with regard to the tribes, and as they involved a loss of revenue for uncooperative chiefs, they were often effective.

Political systems which combine a centralized office that controls the bulk of the agricultural wealth of the area with nomadic tribes that supply warriors to maintain territorial integrity are not uncommon in Southwest Asia. What makes Kalat interesting is the relatively stable balance of power between the khan and the *sardars*. The tribal aristocracy was never vassalized, as it was, for instance, in many Central Asian khanates and in the Jaf Confederacy in Kurdistan (Barth, 1953: 44; Hudson, 1964: 93).

A brief comparison of Kalat with other confederacy structures in Southwest and Central Asia is useful in suggesting some of the critical variables underlying structural differences at the confederacy level. Differences at the maximal level of integration are especially interesting in view of the fact that the structural possibilities of tribal organizations based on pastoral nomadism would seem to be fairly limited on the lower levels of integration. In most cases, ecological pressures mitigate against the emergence of formal corporate groups on the residential level. The adaptive advantage in permitting an easy flow of people in shifting camp groups tends to inhibit the development of a hierarchical chain of authority which penetrates the community level. The Jaf tribes of Kurdistan and the Basseri of southern Iran, as well as the Brahui all function through personal, dyadic ties of a superior-subordinate nature. The formal table of organization is similar in all three cases (Barth, 1953: Chap. II; Barth, 1961: Chaps. IV, V).

The Persian Khamseh Confederacy incorporates only the nomadic segment of the regional population. The resources supporting the ruling dynasty come from outside the confederacy itself, and the balance of power lies with the territorial state. The Jaf Confederacy developed in an area where feudal patterns of land tenure and central government control have co-existed for centuries. The presence of several different land codes, plus the unstable extension of central government control to parts of the area resulted in the paramount dynasty obtaining title to all settled lands within the confederacy, and the tenant-landlord bond short circuited the tribesman-chief-khan links upon which the Kalat Khanate was built.

The Kalat Khanate is most reminiscent of the tribal confederations of Central Asian nomads. In Central Asia, however, rapid and extensive territorial expansion under the Genghisids and the proximity of the Chinese civilization led to an emphasis on territorial administration with princes of the ruling house frequently assuming control of tribal units.

It is clear that the term, tribal confederacy, has been used to characterize a variety of phenomena, ranging from organizations like the Khamseh, whose head was totally unrelated to the tribal constituents, and which functioned with a minimum of institutional structure, to organizations like Kalat, which approaches a primitive state. Comparative data is rather scanty at present, but it suggests that the structural differences found at this level reflect the interplay between three related factors: 1) the genesis of confederacy integration, 2) the incorporation of all the resources within the territory, and 3) the level of political integration of impinging societies. The fact that the Kalat Khanate was more elaborately structured and better stabilized than the Khamseh and Jaf Confederacies is related to the fact that the Ahmadzais did not invade the system from outside. Rather, as we said before, they attained a stable control of the throne because political integration at this level was ecologically advantageous for the tribal population as a whole. Furthermore, the Kalat Khanate developed and maintained itself in a larger environment in which the neighboring political systems were also tribally based. Although states and empires may have, from time to time, enforced a tributary relationship with Kalat, they did not attempt to incorporate the Khanate into a larger, territorially based political structure.

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The Status of Nomadism as a Cultural Phenomenon in the Middle East[*]

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THE PURPOSE of this paper is to draw attention to the sociological and ecological diversity of pastoral nomadic groups in the Middle East in general, and the Iranian cultural area in particular, to suggest that because of this diversity the term "nomadism" might more profitably be restricted in anthropological usage to the simple denotation of a trait of cultural ecology (rather than a category of society), and, finally, to suggest that certain traits of social organisation may be expected to be coincident with this trait of cultural ecology.

The range of ethnographic data at my disposal (much of which is unpublished) is not ideal, and may not be representative, but is nevertheless sufficient to demonstrate diversity. The argument falls into four parts: I discuss the range of variation in relationships between the nomadic herding group and its natural environment, then the internal structure of the group, and thirdly the social aspects of its ecology. This last leads me to a discussion of the ideology of nomads. Finally, I draw some conclusions and suggest how and to what extent the nomadic adaptation determines or influences other aspects of the culture of the group.

I

The nomadic herding group and its natural environment

The three main variables in the cultural ecology of pastoral nomads are animal, product, and pattern of movement. The type of animal is largely determined by the type and quality of pasture available. For example, the grazers – cows and sheep – need more succulent growth than the browsers – camels and goats. Cows need it in a more concentrated form, i.e. more grass per square yard, than sheep. Camels, the most mobile of the four, can subsist on the sparsest vegetation, though if they are to be worked efficiently they must be force-fed. The type and quality of pasture depends mainly on climate and soil. It is not surprising then that we find one broad central zone including the Sahara and its peripheries and most of Saudi Arabia with a largely nomadic population which relies primarily on the camel, but also maintains a strong interest in the goat. South of this zone the cow is the most common means of pastoralism, and north of it, particularly in the Iranian area and Central Asia, the sheep. Goats may be kept in a flock of sheep, where they are useful as flock leaders and their hair serves different purposes from the sheep's wool, and this is the most typical nomadic situation in the Iranian area. Only in particularly marginal areas, such as parts of Baluchistan, pastoralism is confined to the exploitation of goats, and it is interesting to note that Baluchistan probably provides some of the best examples of "multi-resource" nomads (cf. above, by P. C. Salzman), for whom pastoralism provides only a varying and uncertain proportion of their total subsistence requirements.

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Sheep may be reared primarily for the production of meat, wool, cheese, or ghee. Goat herding is more likely to be aimed primarily at the production of cheese or ghee. Camels may be used for their milk, or meat, or for transport or riding. In fact, nomadic pastoralism of sheep and goats in the Middle East is in the great majority of cases orientated *primarily* towards the production of ghee, and camel breeding was until recently essential for communications, though now the biggest demand for camels is as meat. But more important than the production of these marketable or storable commodities is the day to day subsistence of the nomads themselves. Nomads do not subsist entirely on pastoral products except in special circumstances. Their normal diet is invariably augmented by some form of grain or other cultivated product. More usually bread in fact forms the bulk of their diet. Nevertheless, they do also drink milk every day, and it is only the excess over their daily requirements which can be converted into ghee or cheese, and only the excess over the number of animals required to produce this amount of milk which can be sold for other purposes. Thus, the choice of product is to some extent in the first instance a function of affluence, though in the next instance it depends on the availability of a market and on the social ecology of the nomads.

The variations in patterns of movement or migration among nomads is of course very closely allied to their choice of animal and end-product, but is also a direct function of their natural environment. The flocks have to move, if only because they exhaust the pasture, and must allow it to recover. In some situations (e.g. parts of Central Asia, and Baluchistan) the flocks may move within a very small area, even within a radius of less than 10–15 miles. In such cases it is doubtful to what extent they may usefully be called transhumant, although there is always nevertheless some element of seasonality in their movements. At the other extreme are some of the Zagros tribes, e.g., the Bakhtiari and the Qashqai, who have to move between two distant and different pasture areas in order to avoid seasonal extremes of aridity and heat and cold as well as to find pasture. In some cases among the Bakhtiari this involves the crossing of tremendous natural obstacles and consequent loss of animals, and among the Qashqai an annual round trip of as much as 1,000 km. Between these two extremes many other factors of climate, topography and distribution of resources determine the patterns of movement of nomads in the Middle East. Seasonal migrations are made between hot and cold regions, wet and dry, high and low, river and bush or desert, wells or cultivation and desert. Most patterns of migration are generated (on the ecological plane) by more than one of these polarities. And, even though the local idiom may be "we follow the pasture" there is no description of a migratory pattern which is not regular, at least in the sense that it is determined each year by the same set of specific seasonal factors. According to the length and difficulty of the migration its significance also varies from group to group, both in their annual cycle and their ideology. In some cases the winter and summer pastures may be of nearly equal quality. Often either one or the other is thought of as the real homeland of the group. It is logical to expect such differentiation to reflect the relative lushness of the two pasture areas.

But sometimes it is more closely allied to the ideology of mobility of the nomads. In many cases the differences in the concentration of resources in the two seasonal stations will require the nomads to be relatively concentrated in one of them and dispersed in the other. Even when this is not the case, the migration itself is likely to be made on the basis of a different social unit than the seasonal herding group. Each of the named political confederations of nomads tends to contain many of these variations within the span of its membership. There are also many unnamed groups of nomads, which do not have an independent political identity, and appear in many cases to function as satellites of cities or villages. Finally, there is now evidence to suggest that external political relations (i.e. aspects of social ecology) may constitute an important factor in the mobility of nomads (Irons, 1968). However, the relationship between the nomadic herding group and its natural environment is not only via the intermediary of the flocks. Most nomads have some interest in agriculture because of the requirements of their diet. Many nomads do themselves cultivate. The need for dates and an interest in their cultivation defined the main fixed point in the annual cycle of many Baluch in southern Persian Baluchistan, and a similar situation is analysed earlier by Salzman for northern Baluchistan. All nomads are also hunters and gatherers, at least to a greater extent than are peasants. In fact, like other people, nomads, and particularly subsistence nomads, as distinct from affluent market-oriented nomads, tend to exploit any available resource within the environment which they inhabit. A primary difference between nomads and peasants is that nomads inhabit and exploit a much larger and more varied environment.

II

The internal structure of the nomadic herding group

The ecological factors which help to determine the size and structure of the herding group are primarily two, and they are interrelated. Swidler has shown earlier in this volume on the basis of his data from among the Brahui in West Pakistan that in any given pastoral situation there is an optimum size of flock. When the size of the flock is allowed to exceed or fall below that number by more than a determinable amount not only the efficiency of the herding operation but the actual welfare of the animals suffers significantly. Since individual holdings increase and decrease unpredictably and are not generally allowed to straddle two or more flocks, it is unlikely that any one group of people will be able to form one flock of near optimum size for very long at a time. If, as we reasoned above, the composition of herding groups must also in many cases fluctuate in size according to a seasonally varying ecological situation, and very often individuals have interests in other resources apart from their fellows in the group, it is obvious that the composition of the basic sociological unit of pastoral nomadic society cannot be very stable.

However, ecology cannot tell us anything further about the social or political organisation. Even Barth's argument, (1959: 9) that tightly scheduled migrations through bottlenecks require "strong and effective coordinating authorities", is on a different plane. Autocratic rule may make things much easier, but it is neither an automatic result of the situation, nor can any society in fact ensure a succession of effective autocratic rulers even though it be a structural requirement. It is not surprising therefore that the range of variation in social and political organisation among nomads includes a large number of the possibilities, and does not include anything that is not known also among non-nomadic societies. Apart from the juxtaposition of "vertical" and "horizontal" structures, and continual demographic interchange between them (Barth, 1964), for some (e.g., the Bedu) an agnatic genealogy serves as a model for all social relationships; others (e.g., the Tuareg) remember only three or four generations. The Baluch with whom I worked scarcely knew that amount except in the case of a leader, where a long agnatic genealogy appeared to function as one of the factors in his legitimacy, but in all other respects was an archaism. For the rest, they thought in terms of a network of cognatic intermarriage extending over a certain area. Even their kinship terminology does not distinguish between matri- and patrilaterality. Each such area was then encapsulated in an irregular political model which comprehended the greater part of the province.

Part of the irregularity was due to the class system which operated (ruling elite, nomad, peasant, slave), and the hierarchical ranking of patronymic groups within each class. In this situation class does not function within the nomadic group. Formerly, nomads kept slaves (former slaves who have remained in the society now function as serfs and personal servants to the ruling elite, cf. Spooner 1969) but I have been unable to ascertain satisfactorily their role in the nomadic group. Further west, among the Bedu (Peters, 1966), the Beja and the Tuareg, class appears to play a rather different, ecological role within the nomadic groups, whereby herding companies can regulate manpower without modifying the pattern of ownership of the resources.

III

The Nomadic herding group and its social environment

Most nomads in the Iranian area belong to one of the larger named groups, which are basically political confederacies. However, the primary sociological unit among them – the herding group – is also the basic political unit, and invariably has a range of contacts with people outside the confederacy, particularly with villages. Interaction between nomads and peasants in the Iranian area is now documented back to beyond 3,000 B.C. (before the advent of the Iranians), and there has been a cultural dialogue between these two occupational specializations throughout this period. Barth noted a process of demographic interchange, and suggests (1960: 350) three possible models to comprehend it. Of these the most likely to have general application is the one which he develops least. This sees nomadism as a means to subsistence in marginal (i.e. marginal to agriculture) areas, which can reasonably easily take up the demographic slack from the agricultural areas in times when war, drought, etc., reduce dramatically the capital of resources in the peasants "improved" environment (i.e. particularly irrigation works), and leave a certain number of people without resources, and without the capital to reinvest. Nomadism compared with agriculture, implies the exploitation of the environment without investment. There is plenty of evidence to suggest that various nomadic groups in Iran are very recent additions to their named group. Most peasants keep some animals. If they are left without agricultural resources, the most natural thing for them to do is to move off with their animals as a new primary resource, on the lookout for other multiple resources (see above, Salzman) to exploit. One of the multiple resources of nomads which has not yet been mentioned is raiding, and raiding is perhaps the most conspicuous element in the peasants' memory of the interaction between nomads and peasants, and therefore is the most significant factor in the general ideological polarization between nomad and peasant. Nomads and peasants hate and despise each other, and yet we know that nomads become peasants, and peasants become nomads.

The importance of ideology in this paper is that together with related cultural features such as values it constitutes the most easily comparable and the least diverse aspect of nomadism. The variations are far less than those of ecology and social organisation, which we have surveyed above, and over large parts of the Middle East are almost identical. A certain amount of this similarity may be due to diffusion. But as a single answer this would be a gross oversimplification. We should rather look for factors which might give rise to this type of ideology – even if diffusion may in some cases account for an overlay of almost exact identity. The basic components of this nomadic ideology are pride and efficiency in the use of the unimproved environment, the protection of the individual traveler irrespective of identity or status, and contempt of everything characteristic of peasants.

The key to the ideological situation is in this last element. Pastoral nomadism is primarily a means to subsistence, and as such it involves an adaptation to a natural environment. It does not necessarily presuppose anything cultural. The form of the social and political organisation derive from historical factors: the culture which the group brought with it into the environment, and the social aspects of its ecology. An appreciation of these factors and their effects involves an investigation of the historical origins and development (where this is feasible) of the particular group, and its relationship with its neighbours, whether peasants, cities, market centers, or other nomads.

In the Iranian world at large peasants and nomads proclaim competing ideologies, but form one cultural system. In the few cases (such as the Baluch) where peasants and nomads are subsumed under the same ethnic identity, the peasants are culturally subordinate to the nomads and subscribe to their values. In general nomads and peasants are in continual interaction with each other both on the plane of the community and of the individual. Both occupationally specialized groups may use the same environment – at least for part of the year – but the peasants are relatively more restricted in their use of it. Where each in fact occupy distinct niches there is no essential ecological reason for them to clash. They do not necessarily compete for the same natural resources essentially, though in practice tension is naturally produced when a peasant cultivates new land across a nomad's right of way, or when the nomad needs to water his flocks on migration at a peasant's source of irrigation water. Why do nomads generally despise peasants, and peasants fear or despise nomads? The usual ideological answers are of course not answers at all but ethnographic data. The ideologies are mutually exclusive but the historical traditions are not. It has been suggested that there is latent hostility in all relationships of exchange and reciprocity. In this context the exchange often used to be conducted as much by raiding as more harmonious relationships. Raiding was largely due to the insufficiency of the nomads' ecological niche, but different occupations, especially when they constitute the bases of different subsistence systems, naturally give rise to different ideologies. And ideologies naturally compete. In order to set this constant ideological factor in greater relief, I now characterise briefly two societies in which I have worked myself, and which seem particularly appropriate in this context.

The Baluch of Salah Koh in southeast Persia, when I was studying them in 1965, constituted some seventy two tents distributed between twelve camps through an area of some four hundred square miles of extremely broken and mountainous terrain, varying in altitude from 2,000 ft. in the beds of the larger wadis to 4,000 ft. at the highest peaks. The resources which their level of technology allowed them to exploit in this marginal environment consist of (apart from a small but significant amount of hunting and gathering) i) surface water, ii) pasture, and iii) cultivable soil which surface water can be led on to for irrigation. The area is extremely arid. Rain may fall at any time of the year, or it may not rain for several years at a time. After a fall of rain the torrent beds flood and the flood leaves behind a series of pools which constitute the sole source of water for men, animals, and irrigation. The floods also tend to change the configuration of the terrain on either side of their route more or less at each occurrence. Agriculture depends on accumulations of soil in bends in the course of the torrents. These must be dammed in with drystone walls to guard them from the force of the floods, and an irrigation channel must be constructed to bring water to them from higher up in the torrent bed. Such plots of land are called *band*, and are generally very small. A typical example would grow a dozen date palms, and a few other trees (apricot and pomegranate are the most common), a couple of beds of peppers and perhaps some other vegetables, and room to sow a hundred pounds of wheat.

The Baluch who inhabit this area form an endogamous group, who see their relationships with each other in purely cognatic terms. But this cognatically organised group is encapsulated in an agnatic genealogical model which represents their relationships with other Baluch. Their contact with the outside world (i.e. other Baluch, both nomads and peasants) is primarily through two points of articulation: one political and one economic, which may overlap. They all own allegiance to a particular higher status chief outside the area, and at the time of the date harvest all except a skeleton task force of shepherds leave the area to visit one or another of the nearby date plantations. They also trade surplus ghee for grain, to make up the difference between what they grow themselves and their requirements. They form groups of two to nine tents and shepherd a common flock. But they exhibit no conception of ownership of pasture. On the other hand, ownership of shares in *bands* is individualised. Therefore, they relate to agricultural land as do peasants: by means of individualized rights; whereas as pastoralists they relate to the land (typically again) through corporations with no individualization. They practise pastoralism and agriculture, but are nomadic rather than sedentary, and live out a nomadic ideology, which is a factor in their relationship with their environment and with their neighbors. It would not be possible for them all to settle, because although the area within which they wander is relatively small, even the supplies of water for human use are not constant enough in any one place to allow for permanent settlement.

I find it useful to compare these Baluch with a sedentary village community called Naiband. Naiband is probably the most isolated village in Persia. It perches on a crag in the southeastern foothills of the mountain of the same name roughly in the center of the desert plains of eastern Persia. The population of some eighty families depends for its subsistence on agriculture, dates, and flocks. Agriculture is carried on in the wadis, which the community overlooks, by means very similar to the *bands* described above. Springs provide the water for irrigation. Some parts of the soil thus reclaimed from the wadis is set aside for the cultivation of date palms. But the most important produce of the community is from the flocks which are sent out to graze at various points in and around the mountains according to season. However, the pasture is not sufficient, and much of the date harvest is fed to the flocks. Much of the agricultural effort is also aimed at the flocks in the form not only of alfalfa but millet stalks and other stubble, and the grain in general is of poor quality for human consumption. Superficially, then it appears that the people of Naiband are simply sedentary pastoralists, and I think this is a heuristically profitable approach to the study of this community. Much of their date harvest like their grain, is barely fit for human consumption, but for different reasons. Good dates come from pedigree trees. Pedigree trees must be reared from suckers. Until very recently the people of Naiband were very glad simply to take advantage of anything which took care of itself, for one very good reason: they never knew whether the harvest would be theirs or not. For these desert areas were as infested with raiders as the Persian Gulf was with pirates, and Naiband was an important watering place. Therefore, the people of Naiband huddled together on a rock, did not care to expend too much energy on crops they might never harvest, and relied primarily on flocks they kept up in the mountain. This investment in their environment, though considerable, immediately around the foot of the rock, is very restricted when compared with the more typical peasant communities in eastern Persia. But if they were pastoralists, why did they settle and build houses? After all, the flocks have to keep moving.

Naiband was first colonized at least well over one thousand years ago. Such original colonizers, as well as any more recent arrivals, may have been of peasant origin, and I do not think such a historical factor should be wholly discounted. But more obvious and immediate is the fact that by far the largest and best surface water supply for over a hundred miles in any direction comes from springs in and around the site of the village of Naiband, and the site itself is ideal for defense purposes. In fact, in premodern conditions, any group of people, nomad or peasant, who moved into the area, would be drawn to fortify the site of the village of Naiband for their own security.

The people of Naiband are then, predictably, settled, though otherwise very similar to the Baluch described above, for they have to move about a great deal outside the village in order to meet the requirements of their flocks and their own subsistence. However, they proclaim a peasant ideology, which is to say that, in complete contradistinction from the Baluch above, they set high cultural value on the "improved" environment of their village, and little on familiarity with the unimproved environment outside. Nor is there the nomadic provision for accepting strangers into the society.

IV

My conclusions are brief and simple. Since it is not possible to make a generalisation of the type: "the so-and-so's are nomads; therefore we except to find among them the following trait(s) of social organisation and/or cultural ecology," I suggest that the term "nomadism" itself is not useful except as a term to denote a trait of cultural ecology, i.e. an aspect of the adaptation of a society to its physical and social environment, and the exploitation of its resources. Just why it should have made this adaptation is another, historical, question. The only constant we found in this discussion of the nomad-peasant relationship was ideological, which also has its roots in history, but obviously functions in the synchronic situation as a balancing factor. No doubt there are cases where nomads occupy completely discrete ecological niches in the vicinity of peasants, but even so there will surely be competition between the two ways of life in some other aspect of the life of the total society, whether economic or political. The basis of the ideological distinction between nomads and peasants is after all analogous with the distinction between nature and culture, and we should therefore expect extreme polarization.

Finally, not only would there seem to be no reason why the same range of traits of social organisation should not be found among nomads as among peasants, but none are particularly linked with the former rather than the latter. Nevertheless there *are* statements which may be made about the social organisation of nomads relative to peasants, which stem directly from the nomadic relationship with the environment and natural resources. In particular, as nomads are continually moving as groups and as individuals, and the composition of the groups changes both absolutely and seasonally as the fluctuating resources demand greater or lesser concentration of man power, the social organisation of nomads has to cope with and reflect a fluidity far greater than that of any peasant situation. It follows from this that it is simpler for a nomadic group to include the exploitation of a new resource, or assimilate a change in technology, than for a peasant community. Salzman's "multi-resource" might prove a better common epithet for nomad than pastoral, in relation to peasants.

Similarly, it is much simpler for nomads to assimilate outsiders both because of the fluidity of their social organisation and their common ideology and values. Nomadic areas are the true social refuge areas of the Middle East which should be kept in mind during any consideration of Coon's environmental ones. Finally, I suggest that nomadic cultures and societies are by nature comparatively fluid, marginal, transitional, and unstable, and that the celebrated nomadic ideology should be seen in this context as a stabilizing banner.

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